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Undeclared Economic Activity in Central and Eastern Europe

How Taxes Contribute and How Countries Respond to the Problem

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Abstract

The paper examines the incentives and distortions created by tax policy and administration structures that motivate individuals to undeclare or under-declare work in the new EU member countries. It analyses the tax level and the tax structure "mix" of tax instruments, the special taxation regimes set up to attract workers and entrepreneurs back into the formal economy and how tax policies such as the introduction of a "flat tax" on income from labor and capital impacted workers and entrepreneurs in terms of formalizing work. It also attempts to gain some insight into the effectiveness of tax administration by comparing some input and output measures As non-tax factors can amplify the adverse effects of taxes on the labor market and reduce the effectiveness of tax reform, some of these other economic framework conditions are also discussed. This paper concludes by refining the main results and possible best practices for tackling undeclared work. The paper argues that the new EU member countries have had mixed success tackling undeclared work. While taxation matters, other underlying conditions for formal sector activity are also important. Addressing the problem of undeclared work therefore requires a broad policy approach with further improvements in tax policies, tax administration, and in general economic framework conditions for formal sector activity.

This paper is a product of the Human Development Economics Unit, Europe and Central Asia Region. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted at willi.leibfritz@web.de.

Undeclared Economic Activity in Central and Eastern Europe – How Taxes Contribute and How Countries Respond to the Problem[1]

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[1] This paper—a product of the Human Development Economics Unit, Europe and Central Asia Region—is part of an effort to understand the underlying factors that determine the size of informal employment in the shadow economy, providing background technical analysis for a forthcoming World Bank regional study "In from the Shadow: Integrating Europe's Informal Labor". Policy Research Working Papers are also posted on the Web at http://econ.worldbank.org. The author may be contacted as follows: willi.leibfritz@web.de

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1. Introduction

1. Undeclared work is commonly defined as employment, which according to the law should be declared but is kept fully or partially outside the scope of taxation and social insurance (European Commission, 1998). There are several reasons why people work in the informal sector or – when working in the formal sector - declare only part of their income. In an environment where formal sector jobs are scarce, the informal sector is often the only place individuals can find work, and thus survive. Work opportunities in the formal sector may be lacking because of weak labor demand due to low economic growth or over-burdensome regulations, including high taxes, red tape, and strict labor market regulations. Further, some individuals may choose an informal sector job because the net income is higher – employees don't have to factor in taxes and social benefits in their wages so they can keep more of it. This may result in a decline of labor supply to the formal sector. Indeed, high taxes and other regulations for formal sector activity are often the main reasons why firms and individuals shift activities to the informal sector or declare only part of their income. Some people also feel that the poor quality of government services is a valid reason to work in the informal sector, since they believe that money given to the government is wasted. Under such conditions, tax enforcement is difficult. Furthermore, tax administration may not be adequately equipped with skilled and dedicated staff nor with adequate technical facilities, and the will to enforce the law may be weak due to corruption or a lack of autonomy.

2. The societal approach to tax compliance may also differ between countries. Informality and tax evasion are more widespread when tax systems are complex; paying taxes entails high administrative costs for firms and individuals and the burden of tax enforcement is too high. From this perspective, widespread and sustained informal work can be seen as a warning signal that something is wrong within the framework under which formal sector activity operates. The root causes may include excessive taxes and other regulations in labor and product markets, as well as inefficient bureaucracy.

3. In addition to these structural problems, undeclared work also has a cyclical component. When the economy is booming labor demand in the formal sector increases and workers are in a better position to fight employers seeking to underdeclare their wage, which reduces their unemployment and pension benefits. However, at the time of writing this report, the global economic crisis of 2009 has pushed most Central and Eastern European countries into severe recessions and unemployment has increased. It is very likely that this will lead to an increase in undeclared work in countries that have achieved some progress combatting informality in the past. Additionally, when taxes are raised to reduce fiscal deficits the problem of undeclared work could be exacerbated.

4. Undeclared work raises both equity and efficiency problems. Inequity arises as those who dutifully abide by the law have lower net incomes than dishonest evaders who receive the same gross income. There is also unfair competition between honest firms and firms that underdeclare wages; the latter may also benefit from public procurement if open tendering focuses only on prices. A high incidence of non-declaration of work also creates a vicious cycle of lower government revenues, poor public services, a higher tax burden on fully declared work, and unfair competition between firms and individuals, thus reinforcing incentives for shifting activities to the informal sector. If evasion rises above a critical level it may also become a herd phenomenon leading to less moral qualms (as "everybody does it" - Hanousek and Palda, 2008). Furthermore, large informal sectors tend to restrain productivity

and growth of the economy, as informal firms are generally less productive than formal firms because they prefer to remain small and "invisible" and because informal workers tend to receive less training than formal workers. The incidence of informal activities should therefore be considered when making economic analysis and designing policies.

5. This paper examines the incentives and distortions created by tax policy and administration structures that motivate individuals to un- (or under-) declare work in the new EU member countries and Croatia (to be referred to as NM-EU even if Croatia is not yet a member). As a multi-country, regional paper, certain countries among this group will be selected as archetypes for in-depth analysis and distilling of lessons learned. While cross-country benchmarking of taxation and tax policy indicators is critical, not all countries will be covered comprehensively or uniformly in this analysis. This paper seeks to provide answers to the following questions:

- To what extent is the level and "mix" of tax instruments deployed by governments - and the relative reliance of certain instruments over others, such as taxes on earnings versus other taxes – responsible for the size of undeclared work?

- Are most of these countries making the same "mistakes" with respect to tax policy and administration and the disincentives to formalize?

- What has been the experience with special taxation regimes set up to attract workers and entrepreneurs back into the formal economy? What are the failures, successes, and lessons for policymakers?

- How has the introduction of a "flat tax" on income from labor and capital impacted workers and entrepreneurs in terms of formalizing work?

- Are there successful experiences (inside or outside the region) with shifting away from an "over reliance" on labor taxes to a more efficient tax mix? Has such a shift led to an increase of the formal economies?

6. The following sections first look at the extent of undeclared work in the NM-EU countries (Section 2) and how – according to opinion polls – people in these countries perceive the role of taxation in undeclared work (Section 3). This is followed by a description of the various channels through which taxes may affect undeclared work (Section 4) and by cross-country comparisons of these potential sources for undeclared work, namely the overall tax burden (Section 5), the tax mix (Section 6), labor tax wedges (Section 7), and the design of taxation within the broad tax categories, which may encourage or discourage undeclared work (Sections 8 - 11). This is followed by an attempt to gain insight into the effectiveness of tax administration by comparing some input and output measures (Section 12). As non-tax factors can amplify the adverse effects of taxes on the labor market and reduce the effectiveness of tax reform, some of these other economic framework conditions are briefly discussed (Section 13). This paper concludes by refining the main results and possible best practices for tackling undeclared work (Section 14).

7. This paper argues that NM-EU countries have had mixed success tackling undeclared work. While taxation matters, other underlying conditions for formal sector activity are also important. Addressing the problem of undeclared work therefore requires a broad policy

approach with further improvements in tax policies, tax administration, and in general economic framework conditions for formal sector activity.

2. Undeclared Economic Activity: Widespread with Differences across Countries

8. Problems with informality are apparent in many countries although to different degrees. While it is notoriously difficult to gauge the size of the problem of undeclared work, estimates indicate that most NM-EU countries have relatively large informal sectors – reducing undeclared work is therefore a main policy objective. The relatively high share of undeclared work in these countries is, to some extent, a legacy of its history. In central and eastern European countries, the "black" or "grey" economy increased rapidly during the first period of transition in the early 1990s when the new regulatory framework and the new bureaucracy were in a fledgling stage. Many workers in the formal sector lost their jobs and unemployment increased sharply. Working informally "to help friends" and gain additional income was also common in the communist system. Furthermore, with the breakdown of the old system and the transition to a market economy, the provision of public services was poor, tax administration was nascent, and many perceived the new system as being driven by "the law of the jungle". All this contributed to lower tax morale. In the meantime, the transition of the economy to one with more multinational firms and a more effective bureaucracy has made progress almost everywhere, although to different degrees. However, as labor demand has declined during the recent economic crisis, workers may again be pushed into informal activities.

9. Various approaches have been applied to measure the size of the informal economy and tax evasion and they are not all conclusive. According to an aggregate econometric approach (Schneider - 2009)[2] the informal economy in these countries averages around 30 percent of GDP, which is twice as high as the 21 OECD countries in the comparison group.[3] But there are large differences between NM-EU countries; the Slovak and Czech Republics have informal economies on the lower end (between 17 and 18 percent of GDP) and Estonia, Croatia, Latvia, Romania, and Bulgaria have larger informal economies (between 35 and 40 percent of GDP). Between 1999/2000 and 2006/2007 the size of the informal economies has, according to these estimates, declined somewhat in most of these countries with the exception of Croatia, Bulgaria and Romania (Table 1).

[2] This econometric approach uses direct and indirect tax burdens together with other variables such as burden of state regulation and GDP per capita, currency demand, and employment to estimate the size of the shadow economy; the higher the tax burden, the regulatory burden, unemployment and the cash economy and the lower GDP per capita and the official employment rate, the higher is – according to this approach - the size of the informal economy. For the purpose of our paper, which examines the impact of taxation on undeclared work, this approach of quantifying the shadow economy has, however, a drawback as it is to some extent tautological.

[3] The comparison group of 21 OECD countries includes Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

Table 1: The size of the Shadow economy in the New EU Member countries and Croatia (Shadow economy as a percentage of official GDP)

Countries	1999/00	2006/07
1. Slovakia	18.9	17.4
2. Czech Republic	19.1	18.2
3. Hungary	25.1	24.4
4. Slovenia	27.1	26.4
5. Poland	27.6	26.5
6. Lithuania	30.3	28.2
7. Estonia	38.4	36.0
8. Croatia	33.4	36.5
9. Latvia	39.9	37.1
10. Romania	34.4	37.4
11. Bulgaria	36.9	39.4
Unweighted average	30.1	29.8
Unweighted average of 21 OECD countries	16.8	14.8 (2004/2005)

Source: Schneider 2009.

10. In an international business survey for the IMD World Competitiveness Yearbook 2009, people were asked about the importance of tax evasion for hampering business activity. Among NM-EU countries, the level of tax evasion was seen as least problematic in the Czech Republic (ranked 11th among 57 countries), followed by the Slovak Republic (ranked 17th), while in Hungary (ranked 53rd), Romania (ranked 55th) and Croatia (ranked 56th) tax evasion was seen as most problematic (Table 2). It is unclear, however, if the survey participants in the various countries used the same unit of measurement when assessing tax evasion. For example, it is possible that in one country people are more sensitive to the problem of tax evasion than in another country, even if the actual level of tax evasion is lower. Some caution is therefore needed when comparing the country ranking within the NM-EU countries and also in comparison with other countries.

11. The EU Commission in the European Employment Observatory has published estimates of informal sectors, which are based on National Accounts statistics (EC 2007). These estimates confirm that informal sectors are relatively large in most of the new EU countries. According to these estimates, informal sectors are smaller than estimated by Schneider and the ranking across the NM-EU countries is also different. These estimates reveal that Estonia has the smallest informal sector among the new EU member countries and it is also lower than in some old EU member countries, including Sweden. Estonia is followed by the Czech Republic, Slovakia, Poland, Lithuania, Slovenia, Hungary, Latvia, and Bulgaria (Table 3).

12. Applying a regression model, Albu (2007) estimated for Romania the average share of informal income in total household income at between 17 and 18 percent in 2005, down from around 22 to 23 percent in 2000, which is also lower than the estimate by Schneider and close to the estimate of the EU study. It has also been estimated that in the Czech Republic, Hungary, and Poland around one tenth of the workforce are typically not reported for tax purposes and in Slovakia and Lithuania this share is 6 percent (OECD, 2008, EC 2007).

Based on survey data and applying dynamic analysis and a Markov-chain approach for predictions, Hanousek and Palda (2008) find that in the Czech Republic between 1995 and 2006, the percentage of tax evaders first increased, then leveled off and they suggest that it is now falling along a quadratic path.

Table 3: Prevalence of undeclared work in the New EU Member States according to the EU Commission

1. Estonia	7.3 % of GDP in 2004, a decline by 2.7 percentage points since 2000.
2. Czech Republic	9-10% of GDP, no change in recent years
3. Slovakia	13-15% of GDP estimated in 2000 and moderate decline in recent years
4. Poland	12-15% of GDP after 14 % in 2003
5. Lithuania	6% of total employment. Slight decrease from 8 % of total employment and 15-19% of GDP in 2003
6. Slovenia	17% of GDP, no change in recent years
7. Hungary	18% of GDP, no change in recent years
8. Latvia	18% of GDP, no change in recent years
9. Romania	16-21% of GDP, no change in recent years
10. Bulgaria	22-30% of GDP estimated in 2002/2003; survyeys indicate a marked increase in recent years
Undeclared work in selected other EU countries	Sweden: 5% of GDP and 11% of workers Denmark: 3% of GDP Spain: 12.3% of GDP Greece: above 20% of GDP

Sources: EC 2007; Undeclared Work in an Enlarged Union (Renoy et al., 2004); Statistics Estonia.

3. The Role of Taxes According to Opinion Polls

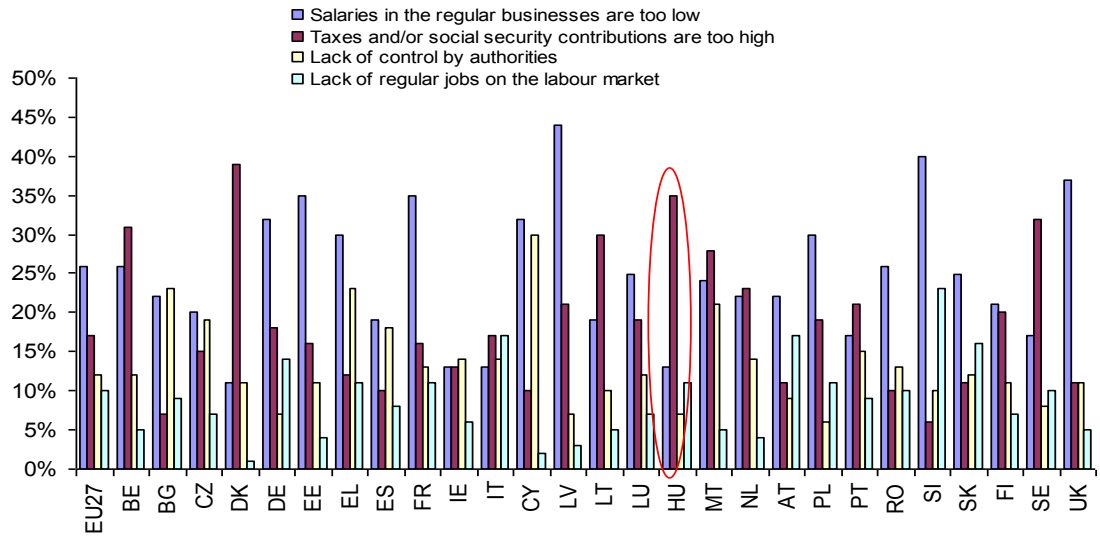
13. In a survey, launched by the EU Commission, individuals in EU member countries were asked to report on undeclared work, defined as all remunerated activities (in-kind or cash), which are in principle legal but are not declared to tax authorities or social security institutions (EC 2007a). According to this opinion poll, the most frequent reasons for taking part in undeclared work in the new EU member countries are that salaries in the regular sector are too low. Taxes and social security contributions are also often mentioned as being an important motivator for working informally. In Hungary and Lithuania about 30-35 percent of respondants mentioned taxes as the most important reason for carrying out undeclared work, whereas taxes was the most important determinant for less than 10 percent of the respondants in Slovenia, Romania, Slovakia and Bulgaria (Figure 1).

14. The European Employment Observatory (EC 2007a) confirms the importance of taxes for carrying out undeclared work. It finds that that:

- In Hungary, high income taxes together with social security contributions are seen as providing strong incentives for undeclared work;
- In Lithuania, the combination of relatively low salaries and high taxes including social security contributions are regarded as the main drivers for undeclared work;

- In the Czech Republic, the high taxation of labor (including social security contribtions) is regarded as a strong incentive for undeclared work;
- In Estonia, high labor taxes are seen as the main reason for undeclared work. The personal income tax has been lowered to encourage regular employment, while at the same time the minimum social security contribtion for the self-employed has been increased to reduce underdeclaration of income. It is felt, however, that the benefit system provides only few incentives to undertake regular work;
- In Latvia, evading taxes is the main motive for undeclared work. The pension system has been reformed by better linking benefits to contributions but it is felt that this is insufficient to reduce tax evasion;
- In Poland, labor taxation, in particular on low wage earners, provides a strong incentive for undeclared work. Informal workers often receive, besides their undeclared income, transfers from the government (retirement pension, disability pension, unemployment benefits, and social assistance) and have therefore no strong incentive to take up declared work;
- In Bulgaria, taxes and social security contributions provide an incentive for undeclared work, but according to the employers´organisations, undeclared work is mainly used by small and micro-businesses, including the self-employed while according to this survey medium and large firms are (with minor exeptions) not involved in undeclared work;
- In Slovenia, labor taxes are relatively high. More recently, the personal income tax has been reduced and (between 2006 and 2009) the payroll tax has gradually been phased out in order to make formal employment more attractive;
- In 2004 Slovakia implemented a major tax reform with all corporate and personal income (and also VAT) being taxed at a flat tax rate of 19 percent and some base-broadening measures. It is felt that this had a positive impact on declaring income, as there are fewer incentives to shift income to a lower tax base;
- In 2005 Romania introduced a flat income tax regime with a flat tax rate of 16 percent for corporate and personal income. While this appears to have stimulated economic growth, there is no evidence so far that it has reduced undeclared work. It is felt that given the complexity of factors that lead to undeclared work, such tax reform constitutes no panacea for combating undeclared work.

Figure 1: What are in your opinion the primary reasons for doing undeclared work? (share of respondents who mentioned this reason as the main reason)



Source: Undeclared Work in the European Union" Eurobarometer survey, October 2007

15. Relatively low regular salaries together with relatively high taxes on labor, may also explain why in the new EU countries undeclared work often takes the form of under-declaration of income by paying part of the wage to registered workers on a cash-in-hand-basis (so-called envelope wage) or registration as self-employed, both of which result in more opportunities to evade taxes. Employers who pay envelope wages not only evade labor taxes but will also have to conceal some of their taxable sales in order to receive unregistered cash. For Estonia, the Estonian Institute of Economic Research (Eesti Konjunktuurinstiituut) estimated that in 2008, 12 percent of employees received unreported wages (of which 6 percent received unreported wages on a regular basis and 6 percent only occasionally); the share of employees who received part of their wage undeclared declined from 16 percent in 2003 to 11 percent in 2006 before increasing again in 2007 to 14 percent. The decline to 12 percent in 2008 may not be sustainable given the recent deterioration of the economy. The decision not to report wages to the authorities appears to largely stem from employers, while the employees have little influence on the decision (Staehr, 2009). Some 31 percent of employees who received undeclared wages were satisfied with the situation, while 45 percent were not. Among those that were dissatisfied, 55 percent believed that they would lose their job if they would not accept this form of payment (European Foundation for the Improvement of Living and Working Conditions, 2006).

16. In 10,671 face-to-face interviews in eleven Eastern European countries, Williams (2008) found that 10 percent of all employees received envelope wages, but that there are large differences across countries. While in the Czech Republic only 3 percent of employees had received envelope wages in the previous 12 months, in Slovenia it was 5 percent, in Poland and Lithuania this figure was 11 percent, in Latvia 17 percent, and in Romania 23 percent. In Romania, employees received about 70 percent of their wage in this manner while in the other countries the share of the undeclared wage as a percentage of total wage is much smaller. Another form of underreporting income is the "gratitude payment" for services of some professions, notably medical doctors. In Hungary, Kornai (2000) interviewd medical staff and the general public and found that such cash-in-hand payments are deeply engrained in the medical system; gratitude payments are most common for obstetrician services, heart

operations, other difficult surgeries, and emergency house visits at night (where about nine out of ten people said that it is customary to give gratitude money).

4. Channels through which Taxes Affect Undeclared Work

17. The economic literature suggests that taxes should be imposed in a way that is least distorting for the economy. A high level of taxes and an unfavorable tax mix can reduce growth and employment in the formal sector and push people to the informal sector. Among economists, there are different views about how important taxes are for growth and employment. This is not surprising as this depends not only the level and structure of taxation but on many other - and partly inter-related - factors, such as the stage of economic development, institutional efficiency, cultural factors, and – last but not least - whether people feel that tax revenue is spent in a productive or unproductive way.

18. In addition to its macroeconomic effects through aggregate growth and employment, taxation also affects undeclared work more directly at the micro level:

- High labor taxes can impose a barrier for firms to create jobs in the formal sector (labor demand effect) or encourage workers to work informally (labor supply effect). As a result, employment is shifted to the informal sector;
- With high labor taxes, firms and workers in the formal sector may collude to evade taxes in order to cope with intense market competition (survival versus compliance). These firms declare only part of the salaries and pay the other (undeclared) part in cash (envelope wage), thus reducing the effective tax on labor. In this case, formal sector employment does not decline but government revenues are lower;
- With high taxes on labor income and low taxes on capital income, individuals may transform labor income into capital income in order to reduce their tax burden;
- The tax treatment of families (individual taxation or joint taxation, granting of family allowances, etc.) may encourage secondary earners to work informally if additional formal income would face a high marginal tax rate;
- Where the effective tax burden is lower for self-employed than for dependent employees (due to lower tax rates, a lower tax base or more room to underdeclare income), workers may shift (voluntarily or being pushed by employers) from dependent employment to self-employment;
- Special provisions, such as in-work benefits (employment tax credits) can reduce the effective labor tax wedge and encourage formal employment. However, as these benefits are generally withdrawn at higher incomes, they raise the marginal effective tax rate, which creates disincentives to increase work efforts and encourages underdeclaration of wages in order to receive full benefits.

19. The impact of taxes on undeclared work also depends on the effectiveness of tax administration. An effective tax administration is crucial for reducing undeclared work and tax evasion in general. If tax collectors have a reputation for being un-professional and services for taxpayers are poor, individuals are more tempted to evade taxes or bribe government officials. Bribes impose a “corruption tax” on business, which is collected by the corrupt individuals at the cost of the general public. The vulnerability to corruption also depends on the level of taxes, the complexity of the system, how much discretion is left to tax collectors, their salaries and on the internal control system of the tax administration.

20. The impact of taxes on undeclared work also depends on factors that are not directly related to tax policies and tax administration. If other obstacles to formal sector activity remain in place, reforming the tax system and tax administration aimed at increasing formal employment and reducing tax evasion may not be effective. Such obstacles can be income-dependent social benefits, which create high effective marginal tax rates and encourage workers to underdeclare wages in order to receive the full benefit. Furthermore, unfavorable conditions for doing business, such as high market entry barriers for new firms and high administrative costs for existing firms, a strict labor code, and a high minimum wage reduce the creation of regular jobs and increase costs of transition from informal to formal activity.

5. The Overall Tax Level: Are Public Sectors Too Large?

21. High taxes increase economic distortions and increase incentives to evade taxes by under-declaring parts or all of economic transactions. Economic distortions and tax evasion are aggravated if a relatively high tax burden is combined with relatively low income per capita, poor provision of public services, inefficient tax administration, high unemployment, and low social protection. Such unfavorable conditions prevailed in NM-EU countries during the initial years following transition and it is therefore not surprising that informal activities flourished. In the meantime, countries have adjusted their public sectors to the new conditions, although this process is by no means complete. Some of the NM-EU countries still have relatively large levels of public expenditure, which require a relatively high tax burden. In these countries, lowering the overall tax burden could help reduce undeclared work but this would also require cutting spending, which is politically difficult. But if the quality of government spending were improved at the same as the spending cuts were made, the provision of public services might not necessarily suffer.

22. The relationship between the size of government (as reflected in total tax revenue as a percent of GDP) and the size of the informal sector is, however, not clear-cut. Thus, other policy goals must be considered when assessing the size of government. Different tax (and spending) levels may reflect different preferences for public goods and services, and social protection through transfer systems and more efficient tax administration. Therefore, many advanced countries, notably those in Europe, have relatively large public sectors while their informal economies are smaller than in less advanced countries with smaller public sectors.

23. High tax levels that have an adverse effect on growth and (formal) employment, likely encourage undeclared work, therefore reducing taxes would reduce tax evasion. However, there is no consensus among economists about the effect of the overall tax level on economic performance. A number of studies found a negative effect of higher tax levels on growth and employment (e.g. Tanzi and Schuknecht, 1996; Leibfritz et al. 1997; Daveri and Tabellini, 2000) while other studies fail to find a strong link between taxes and economic performance (e.g. Agell et al. 1997). For a critical review of the literature see Myles (2009).

24. Based on comparisons with high income countries and considering the lower per capita incomes and less experienced tax administrations, Mitra and Stern (2002) have suggested that transition countries should aim at tax revenue-to-GDP ratios in the range of 22 to 31 percent or so, depending on their stage of development. According to this benchmarking, only Slovakia, Romania, and Lithuania have “appropriate” tax levels while the tax burdens in all other NM-EU countries are “too high”. Estonia and Latvia straddle the

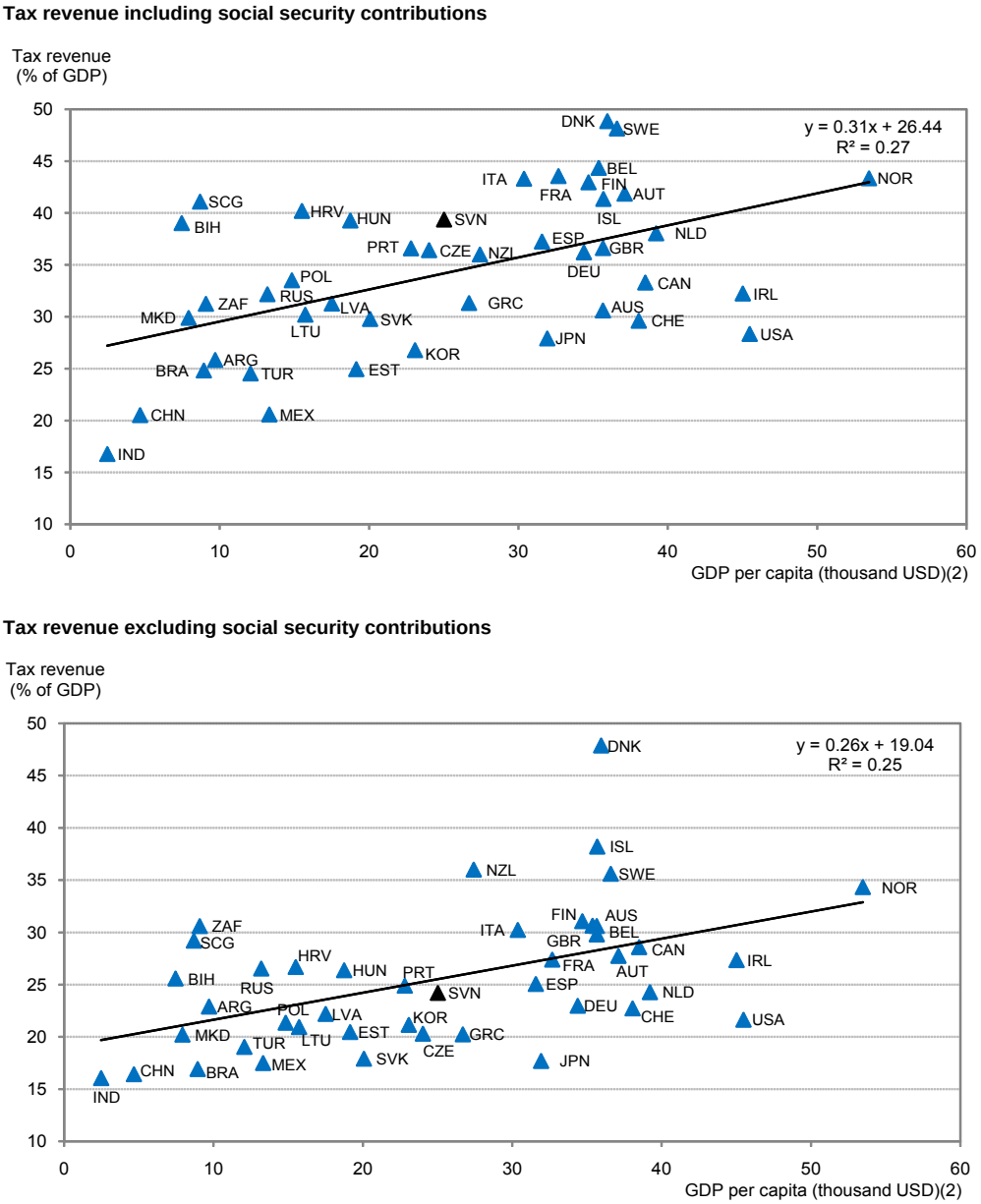
divider between "appropriate" and "too high". However, there is no clear approach for such benchmarking. For example, if we take as as a benchmark the regression line of the international comparison of tax-GDP ratios relative to GDP per capita (in purchasing power parities) as presented in Figure 2, the range of "appropriate" or "desirable" tax levels for the NM-EU countries is between 30 and 35 percent, i.e. 4-8 percentage points higher than suggested by Mitra and Stern. According to this benchmarking, among the NM-EU countries Estonia is a "low-tax country" as its tax level is significantly below the regression line. Lithuania, Latvia,[4] Slovakia, Poland, Czech Republic, and Romania are "medium-tax countries" as their tax levels are relatively close (+/- 2 ½ percentage points) to the regression line. By contrast, Hungary and Slovenia can be labelled as "high-tax countries" as their tax levels are significantly above the regression line.

25. The fact that some of the NM-EU countries collect relatively high tax revenues despite widespread undeclared work suggests that the formal sector in these countries has to carry a particularly large tax burden, which makes working informally or semi-informally even more attractive. Tax incidence is, however, more evenly spread than taxpayers if the formal sector succeeds in shifting part of the tax burden to the informal sector through increasing output prices, (which are purchased by informal firms or consumers who work informally), and/or lowering prices of inputs from informal firms.

26. The analysis of overall tax levels is, however, only a very crude proxy for the possible effects of taxes on economic performance and informal activities as tax distortions emerge at the micro level. In the following sections we therefore examine the structure of taxation, which may also be relevant for encouraging and discouraging undeclared work.

[4] However, in the summer of 2009, the Latvian government has, backed by the IMF, implemented an austerity package, which includes the introduction of a progressive income tax system, a new real estate property tax, and beginning in 2011, a rise in VAT and social security contributions.

Figure 2: The relationship between the ratio of tax to GDP and per capita incomes: an international comparison
Data for 2006 or 2007 (1)



(1) 2004 for Argentina and Serbia and Montenegro.
(2) Calculated using current purchasing power parities.

Source: OECD (2008), National Accounts of OECD Countries - online database, February, IMF (2008), Government Finance Statistics, International Monetary Fund, December; World Bank (2009), World Development Indicators - online database, February; World Bank (2008), and FYR Macedonia - Public Expenditure Review, Report No. 42155-MK, February; Indian Ministry of Finance (2008), Indian Public Finance Statistics 2007-2008; CEIC database for China.

6. Is the Tax Mix Appropriate?

27. Individual taxes differ with respect to their economic and distributional effects and the associated administrative costs. This causes various tradeoffs between different policy goals, which have to be considered when designing the tax system. The NM-EU countries rely to a large extent on indirect taxes and labor taxes while capital is relatively lightly taxed. This tax mix aims at fostering economic growth by shifting the tax mix away from capital income to less distorting taxes, notably consumption. The high labor tax is mainly caused by the extensive social security systems, where most of the benefits are financed by income-dependent contributions from labor. At the same time, corporations are lightly taxed so as to attract business investment, particularly FDI, in order to accelerate economic growth. The bias towards consumption and labor taxes in the NM-EU countries is also illustrated by the implicit tax rates, which are calculated by relating tax revenues to their corresponding macroeconomic tax bases (Tables 4-6). In Hungary and Slovenia, which have been classified above as relatively "high tax", the implicit tax rates are high on both consumption and labor. In the Czech Republic, Poland, Bulgaria, and Romania, which have been classified as "medium-tax countries" implicit tax rates differ significantly with the labor tax burden being highest in the Czech Republic and lowest in Romania. Among the countries classified as "low tax", Slovak Republic, Estonia, Lithuania, and Latvia, the three Baltic States have a particularly low tax burden on capital while in the Slovak Republic the tax burden is more balanced.

28. According to **Mitra and Stern (2003)**, the tax mix in NM-EU countries is much too biased towards indirect taxes and social security contributions while the share of income taxes is too low. They suggested that transition countries should aim at the following shares in total tax revenue: indirect taxes between 32 and 36 percent, income taxes between 27 and 29 percent, and social security contributions between 27 and 32 percent. Among the NM-EU countries, only Latvia and Lithuania have a tax mix which is close to this benchmark although their share of indirect taxes is somewhat higher than suggested. In all other countries the shares of indirect taxes and of social security contributions are "too high" and the share of income tax is "too low" compared to these suggested shares.

29. The problem of high labor taxes is also demonstrated by empirical work on the effects of taxes on the labor market. The general conclusion is that although labor markets tend to be more flexible in Central and Eastern Europe than in the EU-15, high labor taxes tend to reduce employment (Vork et al., 2007; Ederveen and Thissen, 2004; Boeri and Garibaldi, 2005; Lenain and Rawdanowicz, 2004; Cazes, 2002). This can be taken as (indirect) evidence that high labor taxes also encourage informal work in these countries. While some features of the tax mix help to reduce the informal sector, others run counter to this objective. However, when changing the tax mix various tradeoffs have to be considered. These tradeoffs are discussed in more detail in the next section.

Table 4: Implicit tax rate on consumption (in %*)

	1995 - 1999	2000 - 2004	2005 – 2007 (ranking in brackets)
Hungary	28.6	26.4	26.4 (1)
Bulgaria	-	20.2	25.1 (2)
Slovenia	24.2	23.7	23.8 (3)
Estonia	19.6	19.9	23.3 (4)
Czech Republic	20.2	19.8	21.6 (5)
Slovak Republic	23.8	20.5	21.0 (6)
Poland	19.9	17.9	20.4 (7)
Latvia	19.4	18.1	20.0 (8)
Romania	15.9 (1999)	16.5	17.9 (9)
Lithuania	18.9	17.3	17.0 (10)
EU-25 average	21.3	21.1	22.0

* The implicit tax rate is calculated by dividing consumption tax revenue by the macroeconomic tax base.
Source: EU Commission.

Table 5: Implicit tax rate on labor (in %*)

	1995 - 1999	2000 - 2004	2005 – 2007 (ranking in brackets)
Czech Republic	40.3	41.1	41.4 (1)
Hungary	42.9	40.2	39.5 (2)
Slovenia	37.5	37.6	37.3 (3)
Poland	36.1	32.9	34.1 (4)
Estonia	38.4	37.2	33.9 (5)
Lithuania	37.0	38.5	33.6 (6)
Latvia	36.8	36.9	32.4 (7)
Bulgaria	35.9 (1999)	35.5	31.7 (8)
Slovak Republic	38.3	36.1	31.4 (9)
Romania	37.6 (1999)	30.7	29.5 (10)
EU-25	35.9	35.4	34.8

* The implicit tax rate is calculated by dividing labor tax revenue by the macroeconomic tax base.
Source: EU Commission.

Table 6: Implicit tax rate on capital (in %*)

	1995 - 1999	2000 - 2004	2005 – 2007 (ranking in brackets)
Czech Republic	22.8	23.9	25.7 (1)
Slovenia	-	17.3	22.4 (2)
Poland	21.2	20.7	22.2 (2005-2006) (3)
Slovak Republic	30.1	21.6	18.4 (4)
Hungary	-	16.5	16.5 (2005-2006) (5)
Latvia	18.9	9.8	11.7 (6)
Lithuania	8.9	6.9	10.9 (7)
Estonia	10.9	6.6	8.9 (8)
EU-25 average	24.7	24.2	26.5

* The implicit tax rate is calculated by dividing capital tax revenue by the macroeconomic tax base.
Source: EU Commission.

6.1 Tax Mix, Economic Performance, and the Informal Economy – some general considerations

Labor versus capital taxation

30. Labor taxation is generally considered less distorting for the economy than capital taxation. The reasons are that labor is less mobile than capital, i.e. can be more easily taxed and a (pure) labor tax (like the payroll tax) does not affect capital formation and is therefore more neutral with respect to economic growth. The mobility of capital has led to international tax competition with the result that many countries including the NM-EU countries have reduced corporate income tax rates to relatively low levels. This policy aims at promoting economic growth by increasing savings and investment, including FDI. This policy could also have a positive side effect on combating informality. With higher growth, labor demand in the formal sector tends to increase, which reduces the pressure to work informally. Furthermore, by attracting foreign firms, tax collection may become easier as these firms are less likely to underdeclare income than the (often smaller) domestic firms. However, shifting too much of the tax burden from capital to labor can be counter-productive. If the loss of revenue from lowering capital taxation has to be compensated by higher taxes on labor, capital intensity of production tends to increse and a country with an abundant labor force may no longer able to exploit its comparative advantage in the production of labor-intensive goods and services. As a result, labor demand in the formal sector would be lower and informal work would remain high. Furthermore, low capital taxation opens a gap between labor and capital taxation, which encourages workers to evade labor taxation by misclassifying labor income as capital income. A certain degree of capital taxation may therefore be optimal, notably in countries that are vulnerable to informality (Penallosa and Turnovsky, 2004). In a general equilibrium model for Canada, Brou and Collins (2001) find that shifting the mix of direct taxes away from labor towards capital reduces the informal sector – the informal sector is more labor intensive than the formal sector so with lower labor taxation, more of its production is formalized.

31. The optimal tax mix between labor and capital taxation also depends on enforcement capacity (Slemrod and Yitzhaki, 2000). If the capacity to detect business income is relatively low, it is more likely that high labor taxes lead to underdeclaration of wages, independent of the level of profit taxation. With greater capacity to detect business income, firms would have no incentive to underdeclare wages if the profit tax would be higher than the labor tax; wage costs are deductible expenses, so this would increase the overall tax burden of firms. However, as in the NM-EU, the tax on profits is much lower than the tax on labor, incentivizing firms to underdeclare wages independent of the capacity of the administration to detect overall business income.

Labor taxation versus consumption taxation

32. From an economic perspective one could argue that labor taxation and consumption taxation are similar, as both do not tax capital formation, thus promoting economic growth.[5] Croatia has gone the farthest towards consumption-based taxation as it collects not only relatively high shares of tax revenues from indirect taxes and social contributions but has also

[5] According to the theory of optimal taxation, both a consumption tax and a pure wage tax (such as social security contributions) are efficient as they are inter-temporally neutral; both the consumption tax and the pure wage tax do not tax interest income and therefore do not distort saving and investment decisions in contrast to income taxation.

transformed its personal income tax system into a consumption-based tax by allowing deduction of interest income.

33. The effects of labor and consumption taxes on formal sector employment depend on wage flexibility. In countries where the wage bargaining power of workers is strong enough to resist a tax-induced fall in the net real wage by claiming a higher nominal wage, both the labor tax and the consumption tax are shifted back to firms, thus wage costs increase, and as a result employment falls (depending on the elasticity of demand). By contrast, if real wages are allowed to fall as a result of a higher labor tax or a higher consumption tax, labor demand is not affected. However, workers tend to supply less labor to the formal sector (depending on the elasticity of supply) and may instead shift their employment to the informal sector in order to preserve real earnings. Similarly, buyers of goods and services may respond to a higher consumption tax by shifting purchases to the informal sector to prevent a decline of their real disposable income.

34. In the NM-EU countries both labor supply and labor demand effects may play a role in carrying out undeclared work. As the wage bargaining power of workers tends to be relatively weak, part of the labor tax burden may be borne by workers through lower real wages. Additionally, workers tend to respond by underdeclaring wages in the regular sector and also by working in secondary jobs in the informal sector. This hypothesis is supported by the above-mentioned polls, which show that low salaries in the regular sector are seen as an important cause for carrying out undeclared work. At the same time, in some of the NM-EU countries, the combination of a relatively high minimum wage and high employer contributions to social security tends to reduce labor demand for low-skilled workers who then try to find a job in the informal sector or work as self-employed where it is easier to underdeclare income.

35. Given the similarities between labor taxation and consumption taxation it has been argued that lowering labor taxation and increasing consumption taxation accordingly has no major effect on employment, as the real wage remains broadly constant (e.g. Layard et al. 1996). However, this neglects the fact that a general consumption tax (such as the VAT) has a broader base than a labor tax, as consumption is not only financed by labor income but also by capital income, wealth, and government transfers. The effects on prices are also different as labor taxation affects producer prices while consumption taxation affects consumer prices. Reducing employer contributions to social security and increasing VAT accordingly therefore leads to a fall in export prices and an increase in import prices, which increases international competitiveness of firms in the same way as a depreciation of the currency. There may also be some nominal wage rigidity so that lowering labor taxes and increasing consumption taxes may – at least for some time – reduce wage costs for employers. It is therefore not surprising that a number of studies have found that shifting the tax burden from labor onto consumption increases employment and growth, in particular if transfer recipients are not fully compensated for the tax-induced increase in prices (e.g. Daveri and Tabellini, 2000; EC, 2006).

36. From these latter studies one could conclude that shifting from labor tax to consumption tax helps to reduce the informal sector. However, more country-specific analysis is needed before drawing a strong conclusion on how such a tax shift affects the informal economy. While the labor tax reduction makes the use of labor in the formal sector less expensive, which tends to increase formal sector output, the increase in the consumption tax reduces demand for formal sector output. The net effect on formal sector output (and the

size of the informal sector) is therefore ambiguous and depends on the conditions in the countries.[6]

Types of labor taxation

37. There are basically three types of labor tax: (i) the **wage tax**, which is part of the personal income tax; (ii) the employer and the employee **contribution to social security**; and (iii) some countries also impose a **payroll tax**, which is similar to the employer contribution but which is not related to social security. If labor taxation is shifted from employer contributions to employee contributions, it lowers labor costs of employers directly and reduces the net wage of workers. As a result labor demand increases while labor supply declines and as the demand elasticity tends to be higher than the supply elasticity, employment in the formal sector tends to increases. But if – over the longer run – workers are able to recoup the income loss of higher employee contributions by claiming higher gross wages, such tax shifting has no long-run effect on employment amd on informality and it does not make a difference in which form labor is taxed (**this is the so-called Invariance of Incidence Proposition**). As the wage bargaining position of workers in the NM-EU countries is relatively low, this assumption may, however, not fully hold and such tax shifting from employer to employee contributions could lead to permanently lower labor costs and higher employment in the formal sector and a lower informal employment. However, the lowering of informal employment does not necessarily lead to less tax evasion as evasion in the formal sector may increase. The reason is that shifting from employer to employee contributions makes workers in the formal sector more aware of the size of social contributions and as their net salaries fall, they may respond by underdeclaring income to prevent a fall in net income. The response of workers to higher employee contributions also depends on whether these contributions are perceived as taxes or as contributions to an insurance system, i.e. how strong the link is between contributions and benefits.

38. Labor taxation can also be shifted across income brackets. Some of the NM-EU countries impose relatively high labor taxes on low-paid workers. At the same time, higher wage earners benefit from income ceilings of social security contributions, which makes the labor tax regressive. This is also the case in countries with flat personal income taxes: the basic exemption of the income tax makes the overall labor tax progressive for lower income brackets while the income ceilings of social security contributions makes it regressive at higher incomes. Eliminating income ceilings of contributions while at the same time reducing the rate of contributions reduces the labor tax of low-paid workers and eliminates regressivity at higher incomes. As low-paid workers are more vulnerable to informality, this could reduce informal work. Higher paid workers may, however, respond to the higher labor tax by evasion. This risk is smaller if at the same time the insurance characteristic of pension and health care schemes are strengthened, for example by partial privatization or by strengthening the link between contributions and benefits within public schemes (e.g. by introducing defined-contribution pension schemes) so that contributions are perceived less like a tax and more like an insurance premium. Furthermore, raising dividend taxation would reduce the incentive to transform labor income into capital income.

[6] In the above-mentione general equilibrium model for Canada, Brou and Collins (a.a.O.) found – somewhat surprisingly - that a change in the tax mix from income taxes to sales taxes increases the share of the informal economy as the negative effect of the higher sales tax on formal sector output is larger than the positive effect from lower income tax so that the formal sector shrinks.

7. A High Tax Burden on Low Wages Hinders the Transition from Informal to Formal Work

39. This section provides a more detailed analysis of labor tax wedges in NM-EU countries. The implicit tax rate on labor as discussed above is a macroeconomic measure of the effective tax burden on labor. As it is based on actual tax revenues from all workers it is not only affected by the system of labor taxes but also by the degree of tax evasion and the earnings distribution. It is therefore too general a measure to examine the disincentives of individuals to participate in the formal labor market and – when working formally – to measure the incentive to underdeclare income. A better measure for such disincentives is the labor tax wedge, which is measured for typical workers at different income levels. The labor tax wedge is based on statutory tax parameters. It measures the difference between labor costs to the employer and the corresponding net take-home pay of the employee and includes the personal income tax on wage income and social security contributions. The OECD Secretariat is regularly calculating average and marginal labor tax wedges for OECD member countries and in context of the current project the World Bank has extended this analysis to those NM-EU countries, which are not members of the OECD (for more details see Koettl …reference). As lower skilled workers are most vulnerable to informality the labor tax wedge on lower earnings is of particular importance for the transition costs from informal to formal work.

The average tax wedge (ATW) is defined as:

$$ATW = \frac{TLC^{E} - NI^{W}}{TLC^{E}} = \frac{IT^{W} + SSC^{W} + SSC^{E}}{TLC^{E}}$$

where :
TLC^{E} is the total labor costs paid by the employer;
NI^{W} is the net income of the worker;
IT^{W} is the income tax paid by the worker;
SSC^{W} is the social security contribution paid by the worker; and
SSC^{E} is the social security contribution paid by the employer.

The marginal effective tax wedge (METW) is defined as:

$$\text{METW} = \frac{\Delta(TLC^{E} - NI^{W})}{\Delta I^{W}} = \frac{\Delta IT^{W} + \Delta SSC^{W} + \Delta SSC^{E} - \Delta B}{\Delta I^{W}}$$

where Δ are the changes of taxes and of income-dependent social benefits B after a change in gross wage (ΔI^{W}).

40. The results for the first indicator (ATW) are shown in Table 7 for 2008 for a single average wage earner and two lower wage earners.[7] According to these calculations, Hungary

[7] The tax wedge is defined as the share of income tax and social security contributions by employers and employees over total labor costs. The numbers presented in this table refer to a single earner with no children who receives average wage and works 33 or 50 percent part-time or full-time. Alternatively, in most—but not all—countries this can be interpreted also as the tax wedge of a single earner with no children, working full-

has not only the highest labor tax wedge among the ten NM-EU countries but also belongs to the group of countries with internationally high labor taxes. Lower-skilled workers who are particularly vulnerable to informal work also often face high labor tax wedges. For a lower-skilled worker who earns only half of the average wage, labor tax wedges in the NM-EU countries range from around 33 percent in Slovakia to around 43 percent in Hungary. For a one-earner couple with two children as shown in Table 8 [8]Hungary has again the highest labor tax burden among NM-EU countries and – for an average wage earner – among all the 31 countries, which are included in this table. A lower skilled worker who earns only half of the average wage faces in Hungary again a labor tax wedge of around 43 percent compared with only 24 and 27 percent in the Czech Republic, Latvia and Estonia. In the paper by Koettl, which is part of this project, the distribution of labor tax wedges is also shown for both single earners and one earner couples with two children. The labor tax curves are similarly shaped for these two types of workers but for one earner couples with two children, the curves tend to be shifted to the right so that at a given wage the tax wedge is mostly lower for the married worker with two children than for the single worker.

41. Governments in the NM-EU countries are well aware of the adverse effects of high labor taxes on employment and tax evasion and are taking measures to reduce tax wedges. Some of them (Hungary included) are providing employment tax credits (in-work benefits) to reduce the effective labor tax burden (see below). Others, such as Estonia, Slovenia, the Czech Republic, and Bulgaria have recently reduced labor taxes for all or for lower income earners aimed at increasing employment and reducing undeclared work.

time, but receiving 33, 50, or 100 percent of average wage. In the latter case, working full time at 33 percent of average wage might be below the legal minimum wage.

[8] The tax wedge is again defined as the share of income tax and social security contributions by employers and employees over total labor costs. The numbers presented in this table refer to a one- earner couple with two children who receives average wage and works 33 or 50 percent part-time or full-time. Alternatively, in most—but not all—countries this can be interpreted also as the tax wedge of a one-earner couple with two children, working full-time, but receiving 33, 50, or 100 percent of average wage. In the latter case, working full time at 33 percent of average wage might be below the legal minimum wage.

Table 7: Labor tax wedge for single earners with no children by level of average wage 2008

	Level of average wage		
	33%	**50%**	**100%**
Sweden	41.8%	44.6%	47.9%
Hungary	**39.5%**	**43.4%**	**54.1%**
Romania	**37.9%**	**39.9%**	**42.4%**
Bosnia – Federation(1)	37.8%	39.5%	41.8%
Serbia (1)	36.7%	38.0%	39.3%
Germany	36.3%	43.0%	51.5%
Belgium	36.0%	48.5%	55.7%
Lithuania	**36.0%**	**38.9%**	**41.6%**
Finland	35.5%	38.0%	44.9%
Czech Republic	**35.2%**	**36.8%**	**43.5%**
Bulgaria	**35.1%**	**35.1%**	**35.1%**
Poland	**35.0%**	**37.4%**	**39.6%**
Latvia	**34.7%**	**38.2%**	**41.6%**
Greece	34.4%	34.4%	41.5%
Estonia	**34.0%**	**36.8%**	**39.5%**
Austria	33.5%	39.8%	48.5%
Slovenia	**32.9%**	**35.0%**	**42.9%**
France	32.5%	35.0%	49.3%
Netherlands	32.1%	37.5%	45.1%
Italy	31.5%	36.7%	45.8%
Slovak Republic	**31.4%**	**33.2%**	**38.8%**
Bosnia - Republika Srpska (1)	31.1%	32.8%	34.5%
Macedonia (1)	28.5%	30.9%	33.2%
Portugal	28.1%	30.3%	37.3%
Spain	28.0%	29.3%	38.0%
Norway	27.5%	31.1%	37.5%
Japan	26.0%	27.3%	29.5%
United States	22.6%	25.7%	30.1%
United Kingdom	19.9%	26.6%	32.8%
Switzerland	15.9%	26.9%	31.7%
Ireland	7.8%	14.0%	27.0%

1. Values refer to 2009.
Source: OECD Tax and Benefit model.

Table 8: Labor tax wedge for a one-earner couple with two children by level of average wage 2008

	Level of average wage		
	33%	**50%**	**100%**
Sweden	41.8%	44.6%	47.9%
Hungary	**39.5%**	**43.4%**	**54.1%**
Bosnia – Federation (1)	37.8%	37.8%	37.9%
Serbia (1)	36.7%	38.0%	39.3%
Finland	35.5%	38.0%	44.9%
Bulgaria	**35.1%**	**35.1%**	**35.1%**
Greece	34.4%	34.4%	39.8%
Lithuania	**34.4%**	**37.8%**	**41.1%**
Poland	**33.7%**	**33.7%**	**33.7%**
Germany	33.4%	33.4%	42.8%
Romania	**32.9%**	**35.3%**	**40.9%**
Slovenia	**32.9%**	**32.9%**	**35.8%**
France	32.5%	34.1%	45.1%
Italy	31.5%	31.5%	40.2%
Slovak Republic	**31.4%**	**31.4%**	**33.2%**
Bosnia - Republika Srpska (1)	30.6%	30.6%	33.0%
Macedonia (1)	28.5%	30.9%	33.2%
Portugal	28.1%	28.1%	31.0%
Spain	28.0%	28.0%	32.0%
Estonia	**26.9%**	**26.9%**	**31.3%**
Latvia	**26.7%**	**26.7%**	**34.5%**
Netherlands	26.4%	33.4%	43.1%
Belgium	23.6%	35.7%	47.0%
Japan	22.6%	22.5%	26.1%
Austria	22.0%	32.3%	44.7%
Norway	20.9%	26.8%	35.3%
United Kingdom	19.9%	26.6%	32.8%
Czech Republic	**17.7%**	**23.7%**	**31.0%**
United States	14.9%	11.9%	17.9%
Switzerland	12.6%	15.2%	32.9%
Ireland	7.8%	12.2%	18.5%

1Values refer to 2009.
Source: OECD Tax and Benefit model.

42. The transition from unemployment into formal work is not only affected by labor taxes that have to be paid on earned income but also by the loss of unemployment benefits which may, however, be partly compensated by in-work benefits. The average effective tax rate (AETR) of taking up a job is defined as the sum of income tax and social contributions, which have to be paid if the worker takes up a formal job minus the (net) social benefit,

which the worker loses by moving out of unemployment. High replacement rates of unemployment insurance combined with high labor taxes can lead to relatively high disincentives to take up formal employment. Calculations by Koettl et al. show that this is indeed the case in Bulgaria, Estonia, Latvia, Lithuania and Romania. In these countries, workers who move from unemployment into employment sometimes face an effective tax rate of around 80% or more depending on family status, employment of the spouse, and wage levels; **this means that there is hardly any income gain from taking up a formal job**. Among the four new EU member countries, which are also members of the OECD, the disincentives were highest in the Czech Republic, in particular if workers were offered a lower-paid job than they had prior to becoming unemployed. Slovakia increased the incentives to take up formal jobs by tightening unemployment benefits, introducing tax credits for workers (including for children of working families), and lowering labor taxation (OECD, 2007).

43. Tax disincentives can also be calculated for persons who are moving from informal work (without having received unemployment benefits but social assistance) into a formal job. In this case the average effective tax rate can also be denoted as the formalization tax rate (FTR). The progress report by Koettl presents results for the FTR showing that in all four countries the FTRs are very high. Under the assumption that the formalization of an informal job does not change labor costs, i.e. workers bear all labor taxes, it is estimated that workers would lose between 50 and 70 percent of their former income (informal wage plus social benefits). Similarly, if it is assumed that all labor taxes are borne by the employer, labor costs would have to increase by between 50 and 70 percent when the informal job is formalized. This analysis shows the existence of important informality traps in these countries.

8. Are Flat Personal Income Taxes Reducing Undeclared Work?

44. More than half of the NM-EU countries have introduced flat income taxes (Table 9). The main objectives of these reforms were to stimulate economic growth and simplify the tax system; it was hoped that this would also help to increase tax compliance thus reducing undeclared income. The transition from a progressive to a flat personal income tax was often accompanied by a reduction of the corporate income tax rate, which implied a general reduction of income taxation, although in some cases the reduction of tax rates was accompanied by a broadening of the tax base.

Table 9: Flat taxes on personal income

Country	Tax rate in 2009 in %	Flat tax introduced in …
Estonia	21	1994
Lithuania	15	1994
Latvia	25	1995
Slovakia	19	2004
Romania	16	2005
Czech Republic	15/23	2008
Bulgaria	10	2008
Macedonia	10	2007
Albania	10	2007
Russia	13	2001
Serbia	12 (salary income)	2003
Ukraine	15	2004
Georgia	25 (in 2008 the personal income of before 12 percent and the social security contributions of before 20 percent have been merged)	2005

45. A few empirical studies have examined the effect of flat taxes on undeclared income. By using survey questions, **Peter (2008)** found in a cross-country study that transition countries that adopted the flat personal income tax experienced a significant decline in tax evasion after the tax reform. For Russia, which introduced a flat personal income tax in 2001 (with a low rate of 13 percent), **Ivanova et al. (2005)** find that compliance increased substantially after the reform. But according to these authors, it remains unclear if this was due to the tax reform or to the accompanying changes in enforcement, which were taken at the same time. Gorodnichenko et al. (2007) confirm that after the introduction of the flat tax in Russia tax evasion declined significantly. However, in contrast to the other group of researchers they argue that the improvement in compliance cannot be explained by changes in tax enforcement policies and was therefore caused by the introduction of the flat tax. Staehr (2009) finds for Estonia that labor participation elasticities are lower for high-income individuals than for lower income individuals. This suggests that a tax reform, which shifts the tax burden from from higher to lower income earners – as is generally the case with a revenue-neutral flat tax reform - reduces participation in the (formal) labor market. However, as the introduction of the flat tax was often not revenue-neutral and the elimination of the progressive rate schedule was accompanied by an increase in the basic allowance, its effect on the labor market and on tax compliance could have been positive, depending on the circumstances.

46. Given the various other factors that affect undeclared work, a flat income tax should not be seen as a "magic bullet" for reducing undeclared work. Numerous studies suggest however, that reducing labor taxes - both with flat and with progressive income tax rates - tends to increase regular employment and improve tax compliance. If such tax reform is part of a package, which also increases effectiveness of tax collection and improves general framework conditions for business, there is a good chance that undeclared work declines. In the following section we look more closely at the situation in Estonia, Slovakia, and the Czech Republic, which have reformed their tax systems.

8.1 The Case of Estonia

47. According to the Statistical Office, in 2004 (the latest year available) undeclared work in Estonia was only 7.3 percent of GDP, down from 10 percent in 2001 and the lowest among the NM-EU countries.). But other estimates also suggest that Estonia has been rather successful in containing undeclared work as indicated below:

- According to Meriküll and Staehr (2008), Estonia achieved a marked drop in the prevalence of unreported employment from 1998 to 2002 (from 19.5 percent to 9.6 percent) while in Latvia and in Lithuania it increased (from 16.3 percent to 22.5 percent and from 7.2 percent to 11.7 percent respectively);
- According to surveys by the Estonian Institute of Economic Research (EKI), the share of employees who regularly or occasionally receive envelope salaries declined from 16 percent in 2003 to 12 percent in 2008. It is estimated that about 60,000 workers (almost 10 percent of total employment) are receiving envelope wages. EKI estimates that in 2008 this type of tax evasion reduced revenue from social insurance contributions and personal income tax by around 2.7 billion Estonian kroon or 1.1 percent of GDP, while tax evasion from alcohol and cigarette excises was 0.8 billion kroon or 0.3 percent of GDP;
- Undeclared work is most prevalent among small firms with low productivity, which can often only survive by evading at least part of their tax liability. Firms that pay envelope wages often also underdeclare sales, thus evading VAT and using cash from VAT fraud to pay envelope wages. According to EKI estimates, the share of undeclared purchases of goods and services (including illegal purchases) declined from 13 percent of expenditures in 2000 to 7 percent in 2008; undeclared purchases were most frequent in construction or renovation services (30 percent), computer software (29 percent), and tobacco products (25 percent). According to the Estonian Tax and Customs board (Eesti Maksu- ja Tolliamet, EMTA) estimates in 2007 VAT fraud amounted to 2.5 billion kroons (1.1 percent of GDP and 3 percent of state revenue); it increased to almost 4 billion kroons (1.6 percent of GDP and 4.7 percent of state revenue) in 2008;
- According to a 2008 survey by EKI, 15 percent of the employees who said that they are in favor of unrecorded salaries argued that the state has enough resources already and that unrecorded salaries are necessary for the company to survive in the current economic situation (57 percent) and/or that the tax burden is too high (56 percent);
- Underdeclaration of income is also widespread among the self-employed who represent, however, only about 10 percent of all employed persons. The self-employed often reduce their taxable income by declaring only part of their income and by deducting personal expenditures as business expenditures from the tax base. According to estimates by EMTA, the revenue loss (social contributions and personal income tax) from undeclared income from the self-employed amounted in 2008 to 460 million kroons (0.2 percent of GDP);
- Pensioners who continue working also often evade taxes. As they are covered by health insurance they do not need to declare their salaries in order to receive health care coverage and many of them do not pay taxes.
- Kriz et al. (2007) also find that payroll and income tax evasion is most prevalent in small firms in the construction sector and in agriculture, among individuals who are

working part-time, among the low-skilled including those with non-Estonian ethnicity, and among the young and the elderly.

48. All this suggests that the problem of undeclared work exists in Estonia, but it is not as big as in most other NM-EU countries. It appears that fighting undeclared work has been helped by several factors, such as favorable conditions for doing business, which led to high growth and job creation in the regular sector (before the recent crisis), supportive tax policies, and the modernization of tax collection.

49. Estonia has established favorable framework conditions for doing business, which have supported an improvement in the economy. Labor and product market regulations are not a major hindrance for employment in the formal sector; the minimum wage is relatively low (in 2009 - 4350 kroons or less than 300 € per month). With the new Labor Code (beginning July 1, 2009) labor market flexibility has increased further.

50. After the mid-1990s the Estonian economy achieved high economic growth, which was only briefly interrupted by the Russian crisis in 1999. During 2000-2007, average annual growth was over 8 percent, the second highest among the NM-EU countries, and only slightly lower than in Latvia (almost 9 percent). The per capita income level (GDP per capita in Purchasing Power standards) increased from 42 percent of the EU-27 average in 1997 to 68 percent in 2007. In 2008 (after a decline to 67 percent) Estonia had the fourth highest per capita income level among the NM-EU countries after Slovenia (90 percent), the Czech Republic (80 percent), and Slovakia (72 percent). Unemployment declined from 13.6 percent in 2000 to 4.7 percent in 2007. However, this period of high growth ended abruptly in 2008/2009 when the Estonian economy was affected by the global crisis and fell into a deep recession with real GDP declining by 3.6 percent in 2008 and around 14 percent in 2009. Prior to this crisis, labor had become scarce, which strengthened the bargaining position of workers. As a result, workers did not have to settle for job offers with no or only partial social security coverage. But with the economic crisis in 2008/2009 labor market conditions deteriorated and unemployment increased, thus posing a risk that underdeclaration of wages in the formal sector would again increase and workers would take more informal jobs to make a living.

51. Estonia established a relatively simple and transparent tax system with a lower tax burden than most other NM-EU countries. It was the first European country to introduce a flat tax (in 1994), by eliminating the progressive income tax schedule and applying the same rate (originally 26 percent) to personal and corporate income. Up from 2005, the flat tax was gradually reduced to 21 percent and the personal basic exemption was more than doubled in nominal terms. Since 2000, retained profits became fully tax-exempt and only distributed profits are taxed. Despite high economic growth in the aftermath of the tax reform, the tax reductions did not lead to a Laffer curve effect. Revenues from the personal income tax and the corporate income tax declined from around 8 percent and around 2 percent of GDP in the second half of the 1990s to around 6 percent and 1.6 percent of GDP in 2004–2008. While the flat tax reform did not lead to higher revenue, it enhanced simplicity, transparency, compliance, and is generally supported by the population and most political parties (OECD, 2009). According to Staehr, most of the flat tax revenue in Estonia is raised from higher income groups with relatively low labor supply elasticities so that the adverse effect of this tax on employment is relatively small. The fact that elasticities are higher for low and middle incomes suggests that the past reductions of the flat tax rate and the doubling of the basic allowance have increased regular employment and thus contributed to reduce informal work,

notably among middle and lower income earners. In 2009, Estonia continued to simplify the tax system by extending the standard VAT rate to more goods and services, which were previously taxed at the reduced rate. Furthermore, the reduced VAT rate was increased from 5 percent to 9 percent.

52. The lowering of the overall tax burden also contributed to combating undeclared work by reducing incentives to evade tax (direct effect) and contributing to higher growth and employment (indirect effect). During 2000-2007, the overall tax burden (as measured by tax revenue as a percentage of GDP) was on average around 31 percent of GDP, down from above 36 percent in 1995. The lowering of the overall tax burden was the result of lower labor taxes (4 percentage points of GDP), and – to a lesser degree – lower capital taxation (by around 1 percentage point of GDP), while taxes on consumption remained broadly constant.

53. Estonia has – together with Slovakia – the lowest labor tax wedge among the NM-EU countries. But low-income earners who are most vulnerable to undeclared work are facing a somewhat higher labor tax wedge than the OECD average, although it is lower than the EU-15 average and lower than in most other NM-EU countries. The labor tax wedge is relatively flat, increasing from around 37 percent of labor costs for lower wages (67 percent of average wage) to around 38 percent for average wages, and around 39 percent for higher wages (167 percent of average wage). Social security contributions (the so-called social tax) are the largest component of the labor tax wedge and therefore tend to reduce (formal) employment more than the personal income tax. But the size of this effect also depends to what degree workers perceive these contributions as taxes or as savings (insurance premiums); in the latter case, workers would not respond by reducing labor participation.

54. Due to the various benefit reforms the link between contributions and benefits has been strengthened, which should in principle have raised the awareness of the positive effects of social security contributions, thus reducing incentives to underdeclare earnings. To this end a three-pillar pension system was introduced and unemployment insurance was reformed. The pension reform implies that future pension benefits are linked to lifetime social contributions so that part of social contributions are no longer taxes (according to the classical definition) but (forced) savings to an insurance system. Furthermore, individuals (including self-employed) only receive public health insurance if a minimum social contribution (social tax) has been paid; exceptions are pensioners, pregnant women, individuals under 19 years old, students, and dependent spouses of an insured person. Maternity allowances are also linked to previous earnings.

55. Tax collection, which is under the authority of the Estonian Tax and Customs Board (EMTA), is perhaps the most modern of all EU countries. It has been facilitated by the simplification of the tax system, administrative reforms, and the prevalence of e-government. Estonia´s rate of electronic filing (personal income tax - 85 percent in 2007, corporate income tax - 88 percent, and VAT - 90 percent) is not only the highest among the NM-EU countries but also among the highest in the world. As a result, Estonia belongs to a group of countries with relatively low costs of tax compliance, as measured by the time spent preparing, filing, and paying taxes. EMTA collects all general taxes, custom duties, and (since 1999) social security contributions. This modernization of tax collection allowed EMTA to shift resources towards areas that help to ensure better compliance. In order to improve tax compliance, public procurement should only be carried out with those firms who do not have tax arrears. EMTA is working closely with the Estonian Labor Inspectorate to exchange risk analysis, and conduct joint operations, as well as cooperating with the Cititenship and Migration Board.

EMTA applies a so-called client-based approach, by raising awareness for tax compliance, using risk-analysis to identify potential tax evaders, and contacting firms and individuals. For example, it sends "notice-letters" to potential payers and receivers of envelope wages, which according to EMTA, increased tax revenues by 59 million kroons. The work of EMTA may, however, be hampered by the relatively low penalties on tax fraud and by the constraint that if it discovers criminal income gained by tax fraud it cannot confiscate this income.

56. Despite much progress to modernize the tax system and tax administration, some features of the Estonian tax and benefit system continue to make it vulnerable to tax evasion and tax avoidance strategies. The fact that social contributions are (with a few exceptions) only paid by the employer reinforces the perception of workers that these contributions are general taxes on business rather than premiums for their social insurance. If the employer contribution (or part of it) would instead be transformed into an employee contribution (while at the same time raising the gross wage), workers´ perception of a link between contribtions and benefits could probably be strengthened. **Currently, tax evasion is often initiated by the employer, as a means to reduce labor costs**. It has been argued that if employer contributions are transformed into employee contributions, workers would become more aware of the relatively high labor tax wedge and would attempt to evade it; the relatively high evasion by the self-employed who directly pay their contributions are taken as a prime example. However, in contrast to the self-employed, contributions of employees are like those of employers withheld at source and any concealment of earnings requires that employers and employees are acting jointly. The pressure to evade contributions would therefore probably decline by such a change, as social security coverage is more in the interest of employees than of employers.

57. The system of means-tested social benefits creates incentives to work informally even if these benefits are not very generous. But when workers take up a low-paying job they lose the full amount of the subsistence minimum allowance, thus phasing a 100 percent effective marginal tax rate and are therefore tempted to hide their income by working informally.

58. The tax exemption of retained profits aims at promoting investment. Given the boom in investment in the years prior to the recent crisis this objective has been achieved, although it is difficult to isolate the effect of the tax incentive from other factors (OECD, 2009 a.a.O.). By taxing corporate profits only when they are distributed as dividends (at the flat tax rate of 21 percent) this tax treatment eliminates double taxation of dividends and prevents discrimination of equity-financed investment against debt-financed investment. However, Estonia´s system of corporate taxation goes further than ensuring tax neutrality between equity financed and debt financed investment as it is biased in favor of retained profits. The reason is that with the retention of profits the value of the firm rises, which is reflected in higher share prices so that capital gains accrue to the owners of the shares. Tax neutrality between equity-financed and debt-financed investment could in principle be achieved without taxing retained profits but in this case the effective tax rate on capital gains must be equal to the tax rate on interest income. While the statutory tax rate on capital gains is the same as on interest income, the effective tax rate is much lower; the reason is that capital gains of shareholders are not taxed when they accrue but only when they are realized, which may be in a distant future. The bias in favor of retaining profits therefore creates a lock-in effect of capital, thus preventing the allocation of capital towards its most productive use. Furthermore, firms may use retained profits to invest in financial assets rather than in fixed investment, thus becoming more and more "quasi banks" rather than productive enterprises. This tax

treatment thus creates economic inefficiencies, leads to (legal) tax avoidance strategies, and reduces the tax base.

59. Inequity among taxpayers also arises between dependent workers and self-employed workers. Although the self-employed have to pay personal income tax and social security contributions at the same rates as dependent workers, they have more opportunities to underdeclare income and also benefit from generous deductions for operating costs. Furthermore, in contrast to the social security contributions for employees, there is a ceiling for social security contributions of the self-employed, which affects, however, only high-income earners (earning more than 15 times the minimum wage). If the self-employed are organized as corporate firms, they also benefit from the lower capital taxation vis-à-vis labor taxation. For example, some medical doctors are organized as corporate entrepreneurs and pay their income out as dividends rather than as wage, thus avoiding the higher labor tax. The gap between capital and labor taxation also encourages managers of firms to transform part of their wage into capital income and distribute it as dividends. According to estimates by EMTA the revenue loss caused by paying dividends instead of salaries amounted in 2007 to 193 million kroons (0.1 percent of GDP). The Estonian financiel newspaper Äripäev (June 31, 2009) reported that Estonian top lawyers earn most of their income as dividends and pay social tax only on 10-20 percent of income.

8.2 The Case of Slovakia

60. Acccording to the Statistical Office, undeclared work in Slovakia was 13-15 percent of GDP in 2000 and declined only moderately in recent years, which places Slovakia in a middle position among the NM-EU countries with respect to the size of undeclared work.. According to the IMD World Competitiveness report, tax evasion in Slovakia is less important for hampering business activity than in most other NM-EU countries (with the exception of the Czech Republic).

61. Slovakia has been successful in implementing profound economic reforms. As a result, framework conditions for firms in the formal sector are favorable. In the World Bank´s Doing Business report, it ranks a bit lower than the three Baltic States, but above the other NM-EU countries. In 2004, Slovakia implemented a fundamental tax reform, which was part of an overall economic reform including a reform of the labor market and a reform of social benefits. The reform package aimed at promoting growth and employment by increasing investment and incentives to work following the slogan “making work pay”. The main tax measures were the introduction of a flat personal income tax and the unification of its rate with the corporate income tax and the VAT at 19 percent. Before, the personal income tax had a progressive rate structure ranging from 10 to 38 percent, the corporate income tax had a standard rate of 25 percent and 15 and 18 percent reduced rates, and the VAT had a standard rate of 20 percent and a reduced rate of 14 percent. The flat personal income tax has a basic personal tax exemption, which is linked to the subsistence level and is reduced gradually at higher incomes and phased out if the tax base is equal or higher than 100 times the subsistence level. As a result the average tax rate increases with rising income thus making the income tax slightly progressive. However, as social security contributions are subject to a ceiling, the overall tax on labor becomes regressive at higher income levels. Furthermore, the tax bases of the personal and the corporate income tax were broadened by eliminating or reducing exemptions and deductions. Excises on mineral oil, beer, and tobacco were increased while the tax on the transfer and assignment of real estate was abolished in 2005.

62. Overall, the tax reform was designed as being broadly revenue neutral. Krajcir and Odo (2005) estimated shortly after the reform that – without considering any positive effects on the economy – it would reduce total tax revenues in the first year by approximately 0.5 percent of GDP. The revenue shortfall from income tax (personal income tax, corporate income tax, and withholding tax) by around 30 percent (1.7 percent of GDP) would be partly compensated by higher revenues from VAT (0.9 percent of GDP) and excises of above one tenth (0.4 percent of GDP). It turned out that in the four years after the reform (2004-2007) the revenue from personal income tax (as a percent of GDP) was 0.8 percentage point lower than in the four years before while the revenue from corporate income tax was 0.2 percentage point higher. Revenue from VAT and excises increased by 0.3 and 0.4 percentage points. Total tax revenue declined by almost 3 percentage points of GDP with two thirds of the decline being caused by lower revenue from social contributions and one third by lower general taxes (Table 10). As in the case of Estonia, the flat tax reform in Slovakia did not lead to a Laffer curve effect (which was also not expected) but to lower revenue as a percent of GDP. As government expenditure declined even faster (as a percentage of GDP) than revenues, Slovakia was able to reduce its general government budget deficit from above 7 percent of GDP in the 2000-2003 to less than 3 percent in 2004 -2007, which also helped to join the Euro zone in 2009.

Table 10: Tax revenue in Slovakia (annual averages as a percentage of GDP)

	2000 to 2003	2004 to 2007
Total taxes	33.4	30.5
Social contributions	14.2	12.3
Excl. social contributions	19.2	18.2
Direct taxes	7.3	6.1
Of which: Pers. Income tax	3.4	2.6
Corp. income tax	2.6	2.8
Other	1.4	0.7
Indirect taxes	11.9	12.1
Of which: VAT	7.2	7.5
Excises	3.0	3.4
other	1.7	1.2

63. The tax reform reduced taxes on income and shifted more of the tax burden onto consumption, which increased incentives to work and to save and thus helped to enhance economic growth **(Brook and Leibfritz, 2005).** Kracir and Odo (a.a.O.) estimated that the tax reform would increase growth of potential output by about ½ percentage point. Indeed, between 2004 and 2008, Slovakia has achieved an average annual growth of 8 percent, the highest of the new EU member countries. Employment increased by almost 3 percent per year while unemployment declined from around 18 percent in 2004 to below 10 percent in 2008. The 2004 economic reform has certainly contributed to this remarkable performance, although it is difficult to isolate the effect of the tax reform from that of other reforms, notably the labor market reform, the pension reform, and the reform of social assistance, as well as from other factors that were not related to the reform, particularly favorable international economic development.

64. The introduction of the flat tax made it easier for taxpayers to comply with the tax code and thus helped reduce undeclared work, but the size of this effect remains unclear. The labor tax wedge declined for low-income earners due to the increase of the basic allowance, which left minimum wages free of personal income tax. The tax wedge also declined for

high-income earners due to the elimination of the progressive rate structure. Average wage earners, married workers with children, and non-working spouses benefited from the refundable child benefit, while the tax wedge for single earners remained broadly constant.

65. In 2005, part of the pension contributions was redirected to the personal accounts of workers; as there exist property rights of such funds these contributions are no longer considered in OECD statistics as labor taxes. The labor market effect of this measure is, however, not clear. As the "forced savings" did not reduce labor costs, it had no positive effect on labor demand. **A positive effect on employment could have, perhaps, resulted from higher labor supply but only if workers perceive this part of their pension contribution as an insurance premium and not as a tax.**

66. Overall, the tax reform of 2004 made the tax system simpler and more transparent. It also led, together with other changes, to a decline in the overall tax burden including the tax on labor. The tax reform and the tightening of social benefits should, in principle, have led to a significant decline in informal work, all the more as the economic growth was high and employment increased until 2007. But undeclared work appears to have declined only marginally since the reform, which suggests that there are also other factors at play. Indeed, many low-skilled workers remain unemployed, often with a long duration of unemployment and in particular in the less developed Eastern regions. These workers tend to have low skills, which reduces their productivity to below the minimum wage and have therefore difficulties finding a regular job. They are also reluctant to leave their region to find a job elsewhere. As a result, these people tend to resort to informal work.

67. While structural economic deficiencies may explain part of the informal economy in Slovakia, some undeclared work may – despite the profound tax reform – be related to taxation:

- Despite a decline in recent years, the **labor tax wedge for low-income earners continues to be relatively high**. As social security contributions (not health insurance) are capped at higher incomes (before 3 and now 4 times the average wage) the labor tax is regressive;
- **The significant upward step of the income tax (19 percent) just after the minimum wage may encourage workers to underdeclare wages** by only declaring the minimum wage even if they earn more;
- **Some tax credits are linked to working in the regular sector and** therefore ease the transition of families from non-employment or informal employment into formal employment, notably the tax credit for taxpayers with dependent children and for a spouse whose taxable income is below the basic allowance level. This latter tax credit may, however, create incentives for the spouse to work informally so that the first earner can fully benefit from the tax credit for the spouse;
- Another problem arises from the fact that self-employed workers benefit from a lower base of social security contributions, so that their labor tax wedge is lower than if they worked as employees, which **encourages bogus self-employment**.

68. The government responded to these problems by introducing a general employment tax credit in 2009, which reduces the effective labor tax wedge for lower incomes. In order to finance this measure the government discussed eliminating (or raising) the income ceilings and, perhaps, including capital income in the base for social contributions. This latter measure would also help discourage people from transforming labor income into capital income but it would weaken the link between contributions and benefits.

69. While past tax reforms have made Slovakia´s tax system simpler and easier to obey, the system of tax collection has not kept pace, which makes it still cumbersome for taxpayers to comply. In Slovakia a typical firm needs 325 hours per year for the compliance of all business taxes while in Estonia only 81 hours are neded. As a result, Slovakia ranks much lower (126th) with respect to paying taxes in the World Bank's Doing Business report than Estonia (34th) despite similar tax rates. The government is now in cooperation with the World Bank preparing a reform of tax collection (UNITAS), which after full implementation (planned for 2014) will unify the collection of general taxes and social insurance contributions, as is already the case in Estonia and some other NM-EU countries (Hungary, Bulgaria, Latvia, Romania, and Slovenia).

8.3 The Case of the Czech Republic

70. The Czech Rebublic appears to be among those NM-EU countries that have made some progress in containing undeclared work. Acccording to the Statistical Office, undeclared work in the Czech Republic was 9-10 percent of GDP in 2006/2007, the second lowest after Estonia, with no change in recent years. According to the business surveys for the IMD World Competitiveness report, in the Czech Republic tax evasion is a less important factor for hampering business activity than in the other NM-EU countries.

71. Some characteristics of the Czech economy and economic policy have helped to contain undeclared work. The relatively highly skilled workforce amd moderate wage policies with a view towards maximizing employment have eased structural adjustments. As a result, employment in the formal sector has - prior to the recent economic crisis - remained at a relatively high level, which reduced the pressure on workers to work informally. The relatively low unemployment during and after economic transformation has led people to speak of a "Czech miracle".[9]

72. Although undeclared work may be less pervasive than in some other countries of the region it does exist in various forms (Münich, 2007). **Hanousek and Palda (2008)** have carried out regular surveys, asking people whether they evaded taxes and whether they expect others to do so. They find that in the Czech Republic between 1995 and 2006 the percentage of tax evaders first increased, then leveled off and then declined thanks to structural changes and better macroeconomic conditions. Underdeclaration of work is widespread among the self-employed, registered unemployed, and even among workers with regular jobs. Low skilled workers are more affected than higher skilled workers although tax evasion among the latter has also increased. Horáková and Kux (2003) also found that undeclared work is most widespread among the self-employed, small enterprises, low-skilled workers, and workers with secondary jobs. There is also anecdotal evidence of illegal employment of foreigners, notably from Ukraine. The sectors most affected by undeclared work are construction, agriculture, catering, retail trade, and textiles. In 2007 about 40 percent of all workers in the construction sector worked as self-employed and that over 150,000 of the self-employed workers in the construction sector could in principle perform their contracted work also as dependent employees. **Between one eighth and one fourth of all self-employment in the**

[9] During the first phase of transition there was, however, also considerable "hidden unemployment" of workers in state-owned enterprises who added little to production and kept registered unemployment at artificially low levels.

Czech Republic is bogus self-employment, known in the Czech Republic as *švarcsystém*.[10]

73. The main reasons for the relatively high level of self-employed and bogus self-employed are, besides more labor flexibility for the main contractor, the lower tax costs. Although the statutory labor tax rates (personal income tax and social insurance contribuions) are the same for employees and self-employed the latter benefit from the lower tax base. The base for social security contributions was in 2006 only 50 percent of profits and in 2004 and 2005 only 40 percent and 45 percent, respectively. It is also easier for the self-employed to underdeclare earnings by deducting personal expenses as business expenses or non-declaration of sales. **As a result, many of the self-employed simply declare the minimum wage, which is required to receive social insurance coverage.** According to model calculations by **Prusa et al. (2009),** the self-employed in the Czech Republic face a particularly low effective tax burden; in 2005, the calculated unit tax costs (comprising all labor taxes) for self-employed was only around 23 percent while for workers in corporations it was around 41 percent. The ratio between unit tax costs of the self-employed and dependent employed is thus only around 56 percent, the lowest among the 19 EU countries that were considered in the study. In Hungary this ratio is 64 percent and in Slovakia it was around 66 percent. Among the countries considered, Denmark has the most balanced tax treatment between the self-employment and dependent employed (with a ratio between the unit tax costs of around 92 percent).

74. Recent reforms, notably the 2007 and 2008 tax and welfare reforms, aimed at fostering growth and employment. The main measures were:

- The introduction of a flat personal income tax in 2008. The progressive tax schedule with four tax brackets of 12, 19, 25 and 32 percent was replaced by a uniform tax rate of 15 percent. However, as social insurance contributions are now included in the personal income tax base, the tax rate as calculated on a conventional base (i.e. excluding social contributions) is not 15 percent but 23 percent;
- Tax credits (including the basic tax credit) and allowances for working low-income groups were increased. The regular child benefit, which was before income-dependent and granted to all families with children will no longer be income-dependent and will only be granted to families with income below a threshold;
- A ceiling on the base for social contributions was introduced (set at four times the avearage salary). The already existing cap for the self-employed will be raised to this level;
- The corporate income tax rate is gradually lowered from 24 percent in 2007 to 19 percent in 2010 and the tax base will be expanded;
- The reduced VAT rate was raised from 5 percent to 9 percent;
- Unemployment benefits were tightened;
- The retirement age in the pension system will be raised further to 65 years and the qualifyfing perios is raised from 25 to 35 years.

75. It is too early to fully assess the impact of these reforms on the labor market and on tax evasion. Our tentative assessment is that the reforms ease the transition from unemployment and informal work into regular jobs due to lower effective average tax rates on low incomes. But workers with wages just below average are discouraged to increase

[10] The name comes from an entrepreneur, called Mr. Svarc, who at the beginning of the 1990s replaced employees by self-employed. Due to lower taxes and labor costs he could offer the workers higher net earnings.

work efforts, as effective marginal tax rates are relatively high due to the withdrawal of income dependent tax credits. With respect to undeclared work there are also positive and negative effects so that the net effect is ambiguous: The creation of more regular jobs will reduce informality and evasion while the higher effective marginal tax rates for some income groups tends to increase under-decaration of regular earnings in order not to lose benefits. Higher income earners who benefit from the new caps on social security contributions face lower marginal tax rates and have therefore fewer incentives to under-declare earnings. But the reforms do little to address the problem of low tax payments by the self-emploed.

76. The system of tax collection is particularly cumbersome in the Czech Republic, which may also contribute to tax evasion. **According to the World Bank's Doing Business report, a typical firm in the Czech Republic needs 930 hours per year for the compliance of taxes.** This is the worst performance among the NM-EU countries and brings the Czech Republic to the seventh lowest rank of the all the 181 countries covered in this report. The government is responding to this problem and is now preparing a reform of tax collection in cooperation with the World Bank aiming at unifying the collection of general taxes, custom duties, and social insurance contributions, which should help to considerably ease tax compliance.

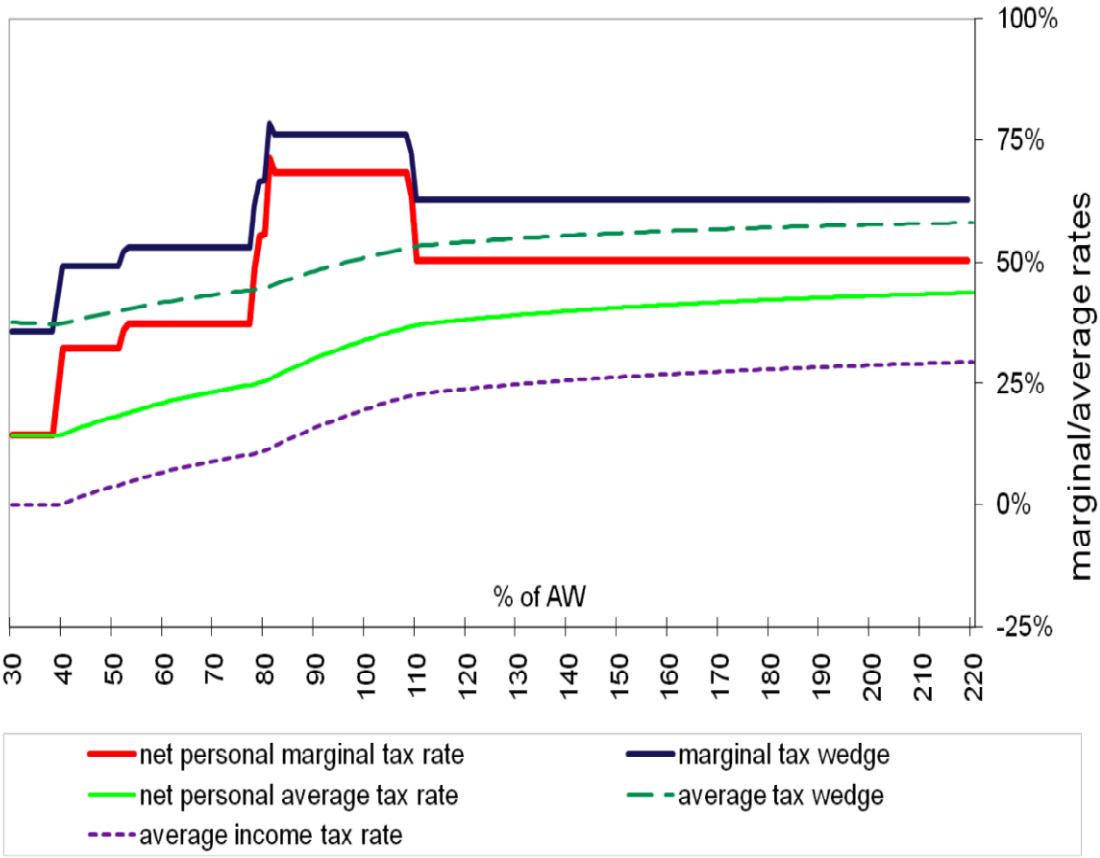
9. Employment Tax Credits Provide Incentives to Take up Declared Work but Disincentives to Increase It

77. As part of a strategy of **"Making Work Pay"**, some countries inside and outside the region are granting an employment tax credit (such as the employment tax credits in Hungary, Sweden and the Netherlands, the US Earned Income Tax Credit, and the UK Working Family Tax Credit). This measure directly reduces the income tax (or in the Netherlands also the social security contribution) liability of workers and can be designed as "refundable" or "non-refundable". If refundable, the worker receives the positive difference between the amount of the tax credit and of the tax liability in cash while with a non-refundable tax credit he/she can (at the maximum) reduce his tax liablility to zero. The tax credit is generally proportional to gross earnings up to a maximum amount and is – after a threshold – gradually withdrawn.

78. As the tax credit increases the after-tax income difference between working in the formal sector and not working or working informally, it provides an incentive to work in the formal sector. As in most of the new EU countries, labor taxes are relatively high even for low wage earners who are most vulnerable to informality; an employment tax credit could be an effective measure to combat informality. However, a generous employment tax credit can lead to high fiscal costs and also to high deadweight costs as those workers who are already working in the formal sector also benefit. Furthermore, as the tax credit is generally phased out at higher incomes, it raises the marginal effective tax rate (which is composed of the marginal labor tax rate and the benefit withdrawal rate) for incomes, which are affected by the phasing-out, which creates disincentives to increase work efforts and incentives to under-declare earnings in order to (fully) benefit from the tax credit. The risk of excessive marginal tax rates is biggest in countries where the labor tax wedge at low incomes is high so that the withdrawal of the tax credit can lead to extremely high effective marginal tax rates. For example, in Hungary the gradual withdrawal of the tax credit increases the effective marginal

labor tax wedge to above 75 percent (Figure 3). A few countries, such as Sweden and the Netherlands are therefore granting employment tax credits for all workers, i.e. without any phasing-out. This prevents an increase of the marginal labor tax wedges, which are already relatively high in these countries, notably in Sweden. The drawback of such generous tax credits is, however, that both deadweight costs and fiscal costs are higher than with targeted tax credits. For Sweden, the fiscal costs of the employment have been estimated at 1 ½ percent of GDP.

Figure 3: Average and marginal effective labor tax wedges in Hungary at different wage levels



Source: OECD.

10. The Tax Treatment of Families Can Provide Disincentives for Secondary Earners to Declare Income

79. The income tax treatment of families together with family benefits can affect the choice to participate in the formal labor market and to declare secondary earnings. If the unit in personal income taxation is the household, there is joint filing. This implies that the first unit of income of the secondary earner (typically the wife) is subject to the high marginal tax rate, which is determined by her husband's income. The joint taxation can thus be a disincentive for the secondary earner to enter the labor market and encourage her/him to work informally.

80. However, with a few exceptions, this source of undeclared income does not appear to be a major problem in the countries that are considered here. The reason is that many of the countries have a flat income tax so that the marginal tax rate is the same for all incomes. And in those countries with progressive income taxes, family members are taxed individually (as in Hungary and Slovenia) or can opt for individual or joint taxation (as in Poland). Furthermore, in Poland, working lone parents benefit from joint taxation as it allows income splitting with their children, which reduces their tax liability and therefore provides an incentive to work in the formal sector. However, in Slovakia and the Czech Republic, work disincentives (and incentives to underdeclare secondary earnings) could arise from tax credits for spouses, as these are granted independent from any declared income of the spouse. These tax credits are part of family policy and aim at raising income of families by reducing their tax liability. As the tax credit for a non-working spouse can be fully used by the primary worker, it creates incentives for the spouse not to work or to under-declare her/his earnings, as the declaration would increase the tax burden of the primary earner. Maintaining the tax credit for the working spouse while phasing the tax credit for the non-working spouse out at higher incomes would encourage secondary earners to enter the labor market. The objective of family policy would still be met as net income of low and middle-income families would not be reduced.

11. Simplified Tax Regimes Can Ease Tax Compliance but Create New Loopholes

81. With the objective to ease the burden of taxes and other regulations, governments often provide preferential treatment and simplifications, such as presumptive taxation for SMEs and the self-employed. This policy encourages entrepreneurship, which was an important policy objective particularly during the first stage of transition to a market economy. It also reduces compliance costs for taxpayers and helps the tax administration to collect revenue from the hard-to-tax-sectors and eases the transition from informal to formal work, thus bringing more people under the tax net and into social security coverage. However, such preferences also encourage individuals to avoid or evade taxes, by shifting their work into the preferential status, such as from dependent employment into self-employment or "false" or "bogus" self-employment. Furthermore, subsidizing small firms with low productivity can encourage an inefficient firm structure with too many small firms. The gains of simplified tax regimes must therefore be weighed against these risks.

82. The share of self-employed in total employment varies considerably among the NM-EU countries (Table 11). It is highest in Romania, Poland, and Bulgaria (between around 27 and 31 percent) and lowest in Estonia and Slovakia (between 9 and 13 percent). In several countries the share of self-employed has declined between 1995 and 2007 (notably in Latvia, Lithuania, Hungary, Poland) while in a few others it has increased (notably in Slovakia and to a smaller degree in Estonia). The different degree of self-employment can be due to different structures of the economies but may also reflect other factors, which may differ across countries, such as the lower labor costs of self-employment due to lower labor taxes as compared with employees and the increased labor market flexibility for firms due to rigid labor codes for employees. The characteristics of self-employment and corresponding tax treatments in the various countries are discussed in detail below.

83. In *Hungary*, entrepreneurs or contract workers with annual gross revenue below a certain amount can choose the simplified entrepreneurs´ tax (EVA). Under EVA, entrepreneurs are not required to record their expenses and pay a flat income tax rate of 25 percent. Paying EVA eliminates all other income tax or levy on their business activity, besides social security contributions, which are allowed to be paid only on the minimum wage, independent of actual income (although higher payments to social security are also allowed). EVA subjects must add VAT (usually 20%) to their invoices, but they neither make VAT payments to the tax office nor can they claim tax credits on their inputs. Cultural workers acting as employees can opt for the EKHO scheme, which also provides a simplified and favorable tax treatment. For individuals who are taxed under EVA and EKHO schemes, labor tax wedges are significantly lower than for normal employees with the difference being particularly large for higher income earners; the labor tax wedge for high income earners in the EVA scheme is less than 20 percent as compared with above 60 percent for normal (dependent) employees with the same income (Leibfritz 2008). The main reason for the lower tax wedge is that the income tax rate is flat and social security contributions are allowed to be based on the minimum wage, while for employees the personal income tax is progressive and social security contributions are proportional to income and – for the employer contribution – without any cap. While the favorable tax treatment of the special schemes provide an incentive to move from the informal into the formal employment, it also creates a big incentive to shift activity from dependent employment into self-employment in order to classify for these schemes. Furthermore, as taxpayers in these schemes cannot claim VAT credits on their inputs they have no incentive to ask for an invoice from their suppliers. With a tax base defined as "VAT-increased revenues", these individuals may also under-declare revenues by not giving a receipt to their clients.

84. In *Poland*, unincorporated SMEs and self-employed can choose (in agreement with tax authorities) either to be taxed at the uniform 19 percent tax rate (general regime) or to pay a lump-sum tax (presumptive tax regime) where the tax turnover (registered revenues) and the tax rate varies according to the nature of the business; the lump-sum tax is in most cases below the CIT and PIT rates on capital income of 19 percent. In the general regime, firms can deduct wage costs as expenses, which raises the incentive to declare employees. This is not the case in the presumptive tax regime, which makes it more vulnerable to tax evasion. Self-employed individuals (own-account workers or sole traders) are entitled to a flat-rate tax of 19 percent on their declared income, as compared to the progressive rate structure applicable to labor income of dependent employees. Furthermore, as it is difficult for the tax authorities to assess actual earnings, the self-employed may pay only a minimum social security contribution, based on the minimum wage, which corresponds to 60 percent of the average wage. In 2005, the social insurance base of the newly self-employed was reduced for the first 24 months to 30 percent of the minimum wage. As a result of all these measures the self-employed tend to have a much lower tax wedge than regular employees. There is some anecdotal evidence that firms are encouraging their dependent employees to turn into (false) self-employed in order to reduce taxes. In order to fight such fictitious self-employment, the government has tightened the eligibility criteria and it has also reduced the tax wedge for employees (OECD, 2008). Another source for tax avoidance and evasion is the social insurance scheme for farmers (KRUS) according to which farmers pay a flat rate contribution so that their labor tax burden is significantly lower than for non-farm workers and self-employed. This encourages people to hold small plots of land in order to classify as farmers even if they are not actively working as farmers (World Bank, 2001). It also increases informal work in rural areas and creates disincentives to move out of farming into more productive sectors.

85. In the *Czech Republic*, self-employed also benefit from a lower labor tax wedge due to a lower tax base for social insurance contributions, which is only half that of employees. According to a survey by the Research Institute for Labor and Social Affairs (Výzkumný Ústav Práce a Sociálních Věcí, RILSA), the number of "false" self-employment (in Czech labelled as 'švarcsystém') amounted to 100,000 in 2006-2007. Experts from the Czech Chamber of Commerce (Hospodářská komora ČR, HK ČR) estimate that this figure could be significantly higher at 200,000 workers. These figures represented between 13 and 26 percent of the 750,000 self-employed individuals in the Czech Republic in 2007. This type of work contract is not common among large firms but more among medium-sized and smaller companies. According to the survey by RILSA, despite short-term benefits for the firms, over the longer-term this type of labor contract also carries risks as competitiveness could decline due to insufficient training and lack of loyalty. Furthermore, due to lower social insurance benefits, the self-employed face a higher poverty risk over the longer-term.

86. In the *Slovak Republic*, self-employed workers also benefit from a lower labor tax wedge, as their tax base for social security contributions is only half of the average monthly taxable income of the previous year. This encourages bogus self-employment and has led to a nationwide discussion on false self-employment during the preparation of the amendments to the Labor Code in 2006/2007. The main critique was the insufficient social protection of involuntary self-employed workers. The policy objective is to eliminate involuntary self-employment.

87. In *Latvia*, there is an ongoing debate about the need to simplify the tax regime for SMEs and thereby remove incentives for undeclared work. Self-employed workers have to register with the State Revenue Service (Valsts Ieņēmumu Dienests, VID) and to record all economic activities (income, costs) in a special record book. Self-employed persons, who work as individual businesspersons, are required to register themselves with the local government. They are personally responsible for paying personal income tax and social contributions. The record book helps the VID to control tax payments. However, the contracting company can also directly pay taxes for the self-employed, although this is not obligatory. The personal income tax is 15 percent of business income of self-employed people, which is lower than the tax rate on wage income (25 percent). The self-employed benefit from the fact that they can optimize personal tax payments more effectively than employed persons because they have less restrictive rules for reporting individual costs. For example, they may reduce their taxable income by including in their deductible expenses transportation costs from and to the workplace, part of living space rent, communication costs (telephone, internet), etc. The social contribution rate is 29.95 percent of the payroll for self-employed people, compared with 33.09 percent of the payroll for employees. In general, the majority of social contributions (25 percentage points) is paid by the employer and only 9 percentage points is paid by the employee, while self-employed persons pay the whole contribution. Self-employed people do not need to pay social contributions if their monthly income is below a threshold (in 2009 EUR 213). If it exceeds this threshold, social contributions must be paid at least from this amount, and it is up to self-employed person to decide how much to pay for social contributions from the exceeding amount. The amount of payment is strongly correlated to the level of social benefits (including old age pension), payable to self-employed workers. **There is anecdotal evidence that some employers force workers to accept the status of self-employed in order to reduce labor costs and sometimes these people work without a contract, and without any social security coverage.**

88. In *Estonia*, social security is financed by income-related contributions (social tax) and by state transfers. Self-employed persons have to pay contributions to the general pension scheme and to health insurance. They can also join, on a voluntary basis, the unemployment insurance. The self-employed have a somewhat simplified tax regime as they can declare their income once a year and they are able to use cash basis, but the rates for personal income tax and social contributions are the same as for dependent workers. However, the self-employed use various opportunities to evade or avoid labor taxation so that their actual contribution to government revenue remains very small. There is also some evidence that part of self-employment, notably in the construction sector, is forced self-employment. This has initiated a discussion about the insufficient social security coverage of these workers and measures have been taken to improve the situation. For example, the self-employed have obtained a right to join the second pillar of the pension insurance scheme.

89. In *Lithuania*, self-employed persons are generally covered on a compulsory basis only by pension social insurance to receive the basic pension and, if their income (and contribution) exceeds a certain amount, also the supplementary pension. By paying national social insurance contributions these individuals acquire a right to receive old-age pensions and disability pensions. Individuals having obtained business certificates or individual activity certificates for certain types of business also have to pay health insurance contributions on an obligatory basis. Until 2008, the self-employed benefited from a lower personal income tax (15 percent) as compared to employees (24 percent) but with the reduction of the personal income tax rate in 2009 to 15 percent this preferential treatment was abolished.

Table 11: Self-employed as a percentage of total employment

	1995	2000	2005	2006	2007
Bulgaria	.	28.2	27.8	27.2	26.6
Czech Rep.	13.8	17.4	18.2	18.2	18.2
Estonia	6.9	9	8.1	8.1	9.1
Latvia	14.9	15	11.6	11.7	10.8
Lithuania	18.8	19.7	17.1	15.8	13.7
Hungary	17.8	15.1	13.8	12.7	12.4
Poland	34.5	36.2	28.3	27.9	26.8
Romania	.	.	33.5	31.7	31
Slovenia	18.8	18.5	17.6	17.4	17
Slovakia	6.6	8.3	13	13	13.2
EU-27	17.9	16.7	16.3	16.1	15.9

Sources: Eurostat: National Accounts Statistics; Research Institute for Labor and Social Affairs (RILSA), Prague.

12. Effective Tax Administration Is a Precondition for Combating Undeclared Work

90. An effective tax administration is crucial for reducing tax evasion. It requires a high quality and sufficient quantity of staff and its efficient allocation among the various functions, notably auditing; this increases the risk of tax evaders being caught. However, relying only on stronger enforcement has an ambiguous effect: while it forces some firms into compliance, others may drop out of the market or go underground. Besides its revenue raising objective, tax administration must therefore also consider its service function for taxpayers, so that they can meet their obligations without undue costs. The task of tax administration is easier if the tax burden is relatively low and the system is relatively simple and when withholding taxes

are widely used. This section compares a few indicators of tax collection, which may shed a first light at the effectiveness of tax administrations in the various countries. It does not aim at fully asssessing the effectiveness of tax administration in the NM-EU countries as this would go beyond the scope of this paper.

91. Giving the tax administration the responsibility to collect and audit not only taxes but also social insurance contributions can lead to significant synergy effects and help reduce under-declared work. This can reduce administrative costs for both taxpayers and the administration and reduce evasion and fraud through better crosschecking and auditing. Countries with integrated tax and social security contribution collection in the region are Estonia, Latvia, Croatia, Hungary, Slovenia, Bulgaria, Romania, and Croatia. In Slovakia, the Czech Republic, Poland, and Lithuania social insurance contributions are still collected separately by social security institutions. As mentioned above, Slovakia and the Czech Republic are planning to introduce integrated collection systems.[11] The integration of revenue collection in these two countries is suported by the World Bank as was also the case in the other countries. For example, the Bulgaria Revenue Administration Reform project, supported by the World Bank, started in 2003 and is now fully implemented. The results of this reform appear to be very promising and compliance has increased (World Bank, Bulgaria, February 2009).

92. The effectiveness of collecting social insurance contributions varies considerably in the region. Table 12 compares the implicit "productivity" of the social insurance contributions, calculated as the ratio between the revenue yield (as a percent of GDP) and the combined contribution rate (in percent). This indicator is, however only a very crude proxy for the effectiveness of collecting social contributions; it is also affected by the design of social security contributions, such as income ceilings and – most importantly – by the size of undeclared work. In Estonia, one percentage point of contribution rate yields 0.38 percent of GDP as revenue while in Romania it yields only 0.2 percent of GDP. Estonia receives higher revenue than Romania although Romania´s contribution rate is 19 percentage points higher and it receives similar revenue as Slovakia, which has a more than 15 percentage point higher contribution rate.

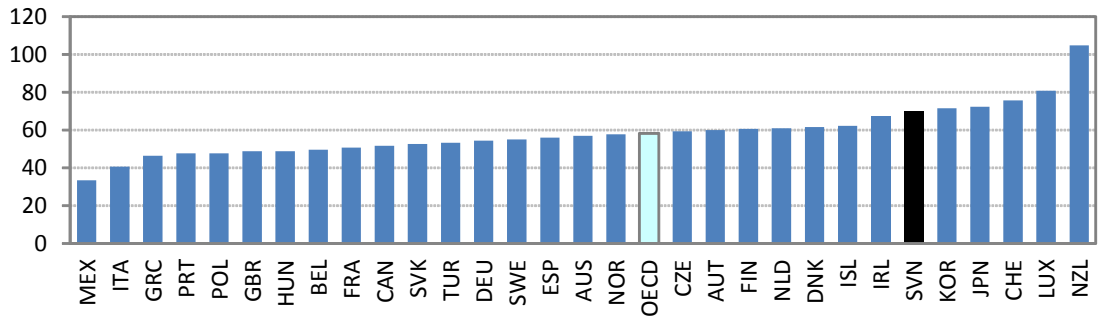
[11] Examples of integrated collection systems in other counties are United States, Canada, United Kingdom, Norway, Sweden, Italy, Ireland, Australia and New Zealand. By contrast in Germany, France and Belgium, social security institutions collect social contributions.

Table 12: Productivity of social insurance contributions (2008)

Country	Revenue (% of GDP) (1)	Total social security rate (%) (2)	Implicit productivity: (1) divided by (2)
Estonia	12.6	33.0	0.38
Slovenia	14.3	38.2	0,37
Czech Republic	16.2	45.0	0.36
Poland	11.4	37.7	0.30
Hungary	13.9	50.5	0.28
Lithuania	9.3	34.0	0.27
Latvia	8.8	33.1	0.27
Slovakia	12.1	48.6	0.25
Bulgaria	8.1	34.4	0.24
Romania	10.3	52.0	0.20
Note: The total social contribution rate is the sum of employer and employee contribution rates to public insurances for old-age pensions, sickness, work injury and unemployment.			

93. Another crude proxy for the effectiveness of tax collection is the VAT revenue ratio. It is defined as the ratio between the actual value added tax (VAT) revenue collected and the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. The gap between the potential and the actual VAT revenue does, however, not only reflect tax but is also affected by tax exemptions, reduced rates, and other special regimes. Figure 4 shows that among the NM-EU countries for which we have this information, Slovenia has the highest VAT Revenue Ratio, followed by the Czech Republic, Slovakia, Hungary, and Poland.

Figure 4: Effectiveness of value added taxes as measured by the VAT Revenue Ratio* 2005**



* The VAT Revenue Ratio (VRR) is defined as the ratio between the actual value added tax (VAT) revenue collected and the revenue that would theoretically be raised if VAT was applied at the standard rate to all final consumption. This ratio gives an indication of the efficiency of the VAT regime in a country compared to a standard norm. The calculation for Canada is for federal VAT only and the OECD aggregate is an unweighted average of data for the countries shown.

** 2007 for Slovenia.

Source: OECD (2009).

94. Tax compliance costs vary considerably among the NM-EU countries. According to the World Bank´s Doing Business Report, the time spent by a model firm on tax compliance is lowest in Estonia, which also has a good ranking worldwide. The reasons are that – as mentioned above – the tax system is relatively simple, the overall tax burden is relatively low and tax collection is centralized and eased by electronic tax declarations. By contrast, the Czech Republic has the highest compliance costs among the NM-EU countries and also ranks poorly worldwide (Table 13).

Table 13: Ease of paying taxes: Time spent on tax compliance

	Hours spent per year by a model firm on compliance of all business taxes (Ranking among 181 countries in brackets)	Of which: Hours spent on labor taxes
Estonia	81 (17)	34
Lithuania	166 (58)	76
Croatia	196 (68)	96
Romania	202 (74)	110
Slovenia	260 (101)	96
Latvia	279 (117)	165
Slovakia	325 (129)	120
Hungary	330 (132)	203
Poland	418 (151)	228
Bulgaria	616 (167)	288
Czech Republic	930 (174)	420
Selected other countries		
Switzerland	63 (9)	40
New Zealand	70 (10)	30
United Kingdom	105 (24)	45
Australia	107 (25)	18
Sweden	122 (34)	36
France	132 (40)	80
Denmark	135 (41)	70
Austria	170 (59)	55
United States	187 (65)	55
Germany	196 (68)	123

Source: World Bank, Paying Taxes 2009 - The global picture.

13. Other Framework Conditions also Affect Undeclared Work

95. The effectiveness of tax policies and tax administration in tackling undeclared work also depends on improvements in other policy areas. In the following we briefly discuss the importance of educational level of the labor force, the role of wage-setting, the regulatory burden for doing business, and of corruption. This suggests that addressssing the problem of undeclared work requires a broad approach and depends on country-specific conditions. Focusing only on tax policies while other barriers to formalization continue may not achieve its objective.

13.1 Skill level of the workforce

96. The skill level of workers affects the chance of finding a job in the formal sector. A low educational attainment therefore increases the risk of long-term unemployment or of working permanently in the informal sector. The impact of educational attainment on informal work has been shown for a number of developed and less developed countries including Bulgaria (Ahn and de la Rica, 1997; Cappariello and Zizza 2009; Peracci et al., 2007; Boeri and Garibaldi, 2005; Barth and Ognedal, 2005). Comparing various indicators, educational attainment (such as primary education drop-out rates and PISA results) across our country group shows that the level of eduction in Romania and in Bulgaria is significantly lower than in the other countries. In Romania, the group of Roma children has a particularly low level of education and a very high risk of being permantly excluded from the formal labor market. Educational attainment also differs among the other countries but the differences are less marked and also depend on the indicators used. Taken as a whole, the level of education appears to be somewhat higher in Estonia, the Czech Republic, Slovenia, Poland, and Hungary than in the Slovak Republic, Latvia, Croatia, and Lithuania.

13.2 Wage-setting

97. High labor taxes tend to reduce employment in the formal sector and shift labor into the informal sector. The size of these effects also depends on labor market institutions and economic conditions. In countries where wages are flexible, labor taxes (including employer contributions to social security) tend to be borne by workers who accept a lower net wage in order to prevent an increase in labor costs, which could put their job at risk. Some of these workers may then increase their efforts to recoup the fall in disposable income so that their labor supply increases (income effect) but other workers reduce their work efforts as net earnings fall or they prefer to work informally where they can earn more than in the formal sector (substitution effect). The net effect on employment and informality therefore depends on the relative size of these opposing effects. Empirical studies have shown that the substitution effect dominates (in particular for second earners, such as married women) so that labor supply in the formal sector declines as a result of high labor taxes and labor supply may then shift to some extent to the informal sector.

98. In the new EU countries, where trade unions appear to be weaker than in the old EU countries, wages appear to be more flexible, which has a positive impact on employment. However, as salaries in regular jobs are often perceived as being too low, workers attempt to get secondary jobs in the informal sector and/or under-declare their regular earnings. These

workers thus recoup the relatively low income from their regular jobs, which arises from both from their low bargaining power and their high labor tax burden, by evading taxes.

99. In order to guarantee minimum living standards, several countries, including those in Central and Eastern Europe, are setting minimum wages through legislation or social agreements. Minimum wages can affect undeclared income in various ways, depending on their level. When minimum wages are set at a relatively low level, they are not detrimental for job creation in the formal sector. If firms only declare the minimum wage and pay an additional undeclared "envelope" wage, the potential for this type of undeclared work is higher the lower the minimum wage is set. This has led some countries to raise the minimum wage as a measure to reduce under-declaration of income. But this policy is risky. The reason is that firms may evade the higher minimum wage (which is set per hour) by showing in their books less hours than have actually been worked; for these firms, the minimum wage is just another level of bureaucracy that has to be dealt with (Ram et al. 2004). Other firms are forced by the higher minimum wage to increase prices in order to cover cost and if this is not possible due to intense competition they will have to reduce employment.[12] As a result, unemployment increases and workers will turn to the informal sector. The increase in the minimum wage also increases the pressure on workers to work as self-employed. The net effect of the higher minimum wage on tax revenue is therefore not clear, as the gain in tax revenue due to lower undeclared income of some firms must be weighed against the risks of evading the higher minimum wage and the decline in regular jobs. These considerations suggest that it is better to keep the average minimum wage relatively low, and perhaps differentiate it according to qualifications and regions, for example setting a reduced minimum wage in less developed regions (see Tonin, 2008).

100. In a cross-country regression analysis Schneider and Dreher (2006) find that stronger minimum wage regulation tends to increase the shadow economy. The European Employment Observatory (European Commission 2007) has also explored the impact of the minimum wage on the prevalence of undeclared work. Among the new EU countries, experiences differ with respect to the impact of the minimum wage on undeclared work and attitudes towards using the minimum wage for combating under-declaration of income also differs. The European Employment Observatory finds that that:

- In *Hungary*, it is likely that the relatively high minimum wage contributes to undeclared work. Its increase has discouraged formal employment of lower-skilled workers and employment in small firms.[13]
- In *Poland*, where relatively few workers are on the minimum wage, the impact on undeclared work appears to be more limited.
- In *Latvia*, the minimum wage has been increased with the aim to reduce under-declaration of income but it remains close to the subsistence level and is thought to still provide incentives to underdeclare income. There is a discussion among policy makers to reduce the minimum wage in order to become more competitive, but it is feared that this would increase under-declaration of earnings.

[12] The minimum wage sets a floor to the gross wage, so that the employer contribution cannot be shifted back onto workers and has to be borne by firms through higher wage costs.

[13] Kertesi and Köllö (2003) found that the increase in the minimum wage in Hungary increased labor costs and reduced employment in small firms and also in poorer regions while large firms were not affected. On the other hand, Tonin (2007) found that the 2001 increase of the minimum wage reduced tax evasion by reducing net earnings of workers between the old and the new minimum wage.

- In the *Czech Republic*, the minimum wage has been increased with the aim to reduce under-declaration of wages. This policy appears to have not achieved its objective.
- In *Slovakia*, the increase in the minimum wage may have acted as an incentive for undeclared work, particularly in small firms and low-wage sectors, although there is no clear empirical evidence for such an impact.
- In *Estonia, Lithuania, and Slovenia*, there appears to be no evidence for a major impact of the minimum wage on undeclared work; in these countries the minimum wage is relatively low and relatively few workers are on the minimum wage.
- In *Bulgaria*, minimum wage earners are exempt from social insurance contributions. While this reduces the costs of transition from informal to formal work, it provides incentives to underdeclare wages in order to benefit from this exemption.
- In *Romania*, the minimum wage is regarded as helpful in reducing under-declaration of earnings. A higher minimum wage has been introduced for workers with high educational attainment. This measure is aimed to reduce under-declaration of earnings by higher skilled workers.

13.3 Regulatory burden for doing business

101. Countries that are reforming their tax systems with the aim to combat undeclared work are unlikely to be successful if at the same time the regulatory burden and administrative costs on business remain high and the quality of government institutions remains poor. Strict regulations on business activity, such as barriers to entrepreneurship including administrative burdens on start-ups and restrictive labor codes, constrain job creation in the formal sector and push firms and workers into informality. The new EU member countries have made much progress in improving conditions for doing business. For example, Estonia has reduced administrative burdens with the help of e-services for taxpayers. In Slovakia, the procedures for starting new business have been simplified. According to the 2009 World Bank´s Doing Business report, which covers 10 indicator sets in 181 countries, the regulatory environment for business is - among our country group - most favorable in Estonia, Lithuania, and Latvia. In some of the other countries, notably Croatia, Poland, the Czech Repbulic, and Slovenia there are still important barriers for business activity (Table 14).

Table 14: Ease of Doing Business (rank among 181 countries)

New EU countries and Croatia	Best performers:
Estonia (22)	Singapore (1)
Lithuania (28)	New Zealand (2)
Latvia (29)	United States (3)
Slovakia (36)	Selected European countries:
Hungary (41)	Denmark (5)
Bulgaria (45)	United Kingdom (6)
Romania (47)	Finland (14)
Slovenia (54)	Sweden (17)
Czech Republic (75)	Germany (25)
Poland (76)	Spain (49)
Croatia (106)	Greece (96)

Source: World Bank, Doing Business 2009.

13.4 Effectiveness of government institutions

102. The quality of government institutions also matters for fighting undeclared work. If institutions remain weak, a tax reform aimed at reducing undeclared work may not achieve its objective.[14] According to the corruption perception index of Transparency International, among the NM-EU countries, Slovenia and Estonia have the lowest corruption while in Bulgaria and Romania corruption is most pervasive (Table 15). This is confirmed by the Control of Corruption index of the World Bank, which can also be taken as a proxy for the quality of government institutions among the NM-EU countries. According to this indicator, Slovenia and Estonia have the strongest and Bulgaria and Romania the weakest government intitutions in the region (Table 16).

Table 15: Perception of Corruption

Country	Score	Ranking among 180 countries
Slovenia	6.7	26
Estonia	6.6	27
Czech Republic	5.2	45
Hungary	5.1	47
Latvia	5.0	52
Slovakia	5.0	52
Lithuania	4.6	58
Poland	4.6	58
Croatia	4.4	62
Romania	3.8	70
Bulgaria	3.6	72

Source: Transparency International, Global Corruption Report 2009.

[14] In the literature there is a controversal discussion about the relationship between institutional quality, corruption and the size of the shadow economy. In theory, the relationship between corruption and the size of the shadow economy is ambigous and can be substitutive or complementary, depending on the circumtances (see Dreher et al. 2005 and Dreher and Schneider 2006 and the literature mentioned in these papers). If corruption (i.e. the use of public power by politicians and civil servants) is used to circumvent overly strict regulations (so-called greasing the wheels) it helps firms to survive in the formal sector so that it is a substitute to working informally. If instead, corruption allows firms or workers to hide economic activity, government officials benefit from the shadow economy and corruption and undeclared work are complementary. Corruption in the form of bribing tax collectors to keep economic activity fully or partially underground is always complementary to tax evasion so that reducing this form of corruption helps reducing evasion.

Table 16: Control of Corruption 2008
(Governance score: from – 2.5 to + 2.5)

New EU countries	Selected other EU countries
Slovenia (+ 0.95)	Finland (+ 2.34)
Estonia (+ 0.94)	Denmark (+2.32)
Hungary (+ 0.55)	New Zealand (+ 2.32)
Slovakia (+ 0.43)	Sweden (+2.24)
Poland (+ 0.38)	Germany (+ 1.77)
Czech Republic (+ 0.37)	United Kingdom (+ 1.77)
Latvia (+ 0.29)	United States (+ 1.55)
Lithuania (+ 0.18)	Spain (+ 1.18)
Croatia (+ 0.12)	Portugal (+ 1.08)
Romania (- 0.06)	Italy (+ 0.13)
Bulgaria (- 0.17)	Greece (+ 0.10)

Source: Governance Matters, Worldwide governance Indicators 1996-2008, The World Bank Group, 2009.

14. Bringing It All Together: Are There Best Practices to Follow?

103. In the previous sections we have discussed the estimated size of undeclared work in the NM-EU countries, its potential causes, and policies to tackle it. We have argued that undeclared work may have numerous sources that may interact, in particular a high overall tax burden, a high labor tax wedge, notably on low earnings, other features of the tax system which provide incentives to under-declare earnings such as unfavorable family taxation, large gaps between tax burdens of different income sources (notably between capital income and wage income and between dependent employment and self-employment), and ease of tax compliance. The divide between formal and informal work is also affected by a number of non-tax factors, such as general framework conditions for formal sector activity, the extent of corruption, and the skill level of the workforce. Based on the discussion above, Table 17 provides a higly tentative qualitative rating of these factors for the various countries. It is clear that there is a high level of uncertainty with such a rating system as it is only based on some hypotheses about the causes of undeclared work and some assessments, which may be debatable, rather than on a model-based econometric exercise.

104. The latter approach would be more meaningful for assessing the effect on the various factors on undeclared work, but would require a much larger sample of countries. Given these caveats, our tentative conclusion is that among the NM-EU countries Estonia has probably the best conditions for containing undeclared work while in Bulgaria conditions are the worst. Comparing the level of undeclared work with tax and non-tax factors, it also appears that the NM-EU countries are in different equilibriums with respect to undeclared work and the impact of taxation. This suggests that in some countries tax reductions may have little effect if other framework conditions are not improved at the same time. Combating undeclared work thus requires a broad approach, which not only strengthens tax enforcement, but also makes it easier to comply with the tax system and with other regulations and which increases the benefits of compliance. This involves improving tax policies and tax administration and other framework conditions for regular economic activities and improving government institutions more generally. As progress in these areas is uneven among the NM-EU countries the design of policies needs to consider country-specific conditions:

- Among the NM-EU countries, Estonia may be a good example to follow with respect to providing relatively easy conditions for paying taxes and has also other relatively favorable framework conditions, although there is still room for further improvements.
- Where the quality of institutions (i.e. control of corruption) is particularly low (such as in Romania and Bulgaria) isolated tax reforms may have little effect on undeclared work. Countries with low tax levels should not continue lowering taxes (and could, perhaps even increase taxes if needed) but should focus on improving institutions, notably tax administration and fighting corruption (Slovakia, Latvia, Lithuania).
- In countries with high overall tax levels, reducing the size of the public sector would provide scope for reducing undeclared work by lowering labor taxes (notably Hungary and Slovenia). Some of the NM-EU countries have established relatively simple tax systems and have also simplified tax collection by unifying the collection of general taxes and of social security contributions. The other countries should follow this practice, as it reduces the costs of paying taxes both for taxpayers and the administration and makes it easier to discover evasion (Slovakia, Czech Republic, Poland, Lithuania).

105. Low-skilled workers who are most vulnerable to informality are in most countries faced with relatively high labor tax wedges, which are mainly caused by social insurance contributions while their personal income tax burden is generally low due to basic exemptions. The high labor tax wedge for low-skilled workers could be reduced by targeted measures, such as:

a. Granting basic exemptions or reduced social insurance contribution rates at low wages;
b. Introducing employment tax credits (in-work benefits), which are gradually phased out at higher income levels.

104. Such targeted measures ease the transition into formal work and also reduce the incentive to work as self-employed. However, they can also lead to revenue shortfalls, which have to be financed by raising other taxes or cutting spending. But care must be taken that the higher marginal effective tax rate at higher income levels (due to the increase of the social security rate and the withdrawal of the employment tax credit) does not lead to work disincentives and/or under-declaration of earnings. When making the choice between reducing the labor tax burden through lower social security rates or through an employment tax credit, it needs to be ensured that labor costs are reduced. For example, in countries where gross wages are not flexible due to a binding minimum wage, an employment tax credit does increase workers' net income and their labor supply but does not increase labor demand as labor costs for low-skilled workers are not affected. In these countries, reducing employer contributions to social insurance may be a more effective tool to increase labor demand.

105. The gap between the tax on dividends and the tax on labor encourages individuals to evade labor taxes by transforming labor income into capital income. There is some evidence that this problem is widespread among the NM-EU countries. This gap could be reduced if by lowering the labor tax wedge by making social security contributions subject to income ceilings (as is the case in some of the NM-EU countries). This would reduce the marginal labor tax wedge for higher income earners so that they have fewer incentives to transform

their wage into capital income. The drawback of this measure is, however, that it makes labor taxation regressive, which may be seen as undesirable for equity reasons. The other option is to raise the tax on dividend income. The drawback of this option is that it raises capital costs for firms that are financing their investment by new share issues, which could constrain the creation of new firms (start ups), which are most dependent on this source of finance. Authorities therefore face the dilemma that narrowing the gap between labor and dividend taxation may violate other objectives. Countries could, perhaps, follow the example of Norway, which implemented in 2006 a reform aimed at reducing the difference between taxation of earned income and investment income. Individual shareholders are taxed on their dividend income exceeding an amount equal to a risk free interest rate. The combined tax on distributed profits at the corporate and the personal level equals 48.16 percent, which is very close to the labor tax wedge.

106. In all NM-EU countries, the self-employed are receptive to evade taxes by underreporting income and sales. Sometimes employers, notably in the construction sector, urge their employees to work as sub-contractors in order to reduce labor cost and to gain flexibility in hiring and firing. This reduces tax revenues and also creates precarious jobs without adequate social protection. Different measures have been taken by governments to address the problem of bogus self-employment and underreporting of income by self-employed:

a. Establishing minimum labor taxes for self-employed. For example, in Hungary the increase in the minimum social insurance contribution between 1996 and 1999 reduced the number of self-employed (Scharle, 2002) and in the Czech Republic the introduction of a minimum income tax has helped to bring the increase of the number of own-account workers to a halt (OECD, 2008). The problem with a minimum labor tax is, however, to find the appropriate level. If the level is too low, the measure is ineffective in reducing tax evasion but if it is too high, self-employed workers may be driven into informality.
b. Making the main contractor more responsible for tax compliance of subcontractors. For example, in France there is a standard contract for subcontracting, which requires that subcontractors abide by the law. In Germany (in the construction sector) and in the Netherlands (in the clothing industry) general contractors are liable for the social insurance contributions of the contracted firm, allowing the authorities to claim tax and social insurance debts of subcontractors from contractors. In the UK, building industry contractors can only pay their subcontractors gross of taxes and contributions if they hold a particular certificate from the Inland Revenue.
c. Strengthening controls to prevent bogus self-employment, i.e. (mis-) classification of (de facto) dependent workers as self-employed. For example, in Germany bogus self-employment is defined if two of the following four criteria are met: (a) the person does not employ another (non-family) worker; (b) the person is regularly working only for one employer; (c) the work is similar to that of an employee, i.e. the person has to follow the instructions of the employer and is integrated into the work organization of the employer; (d) does not carry out work which is typically done by businessmen.

107. The welfare state in NM-EU countries is mainly financed through labor taxes. This leads necessariliy to relatively high labor tax wedges, which encourage undeclared work. Labor taxation tends to be mildly progressive at lower and middle-income brackets (due to the basic allowance of personal income) and regressive at higher income levels (due to

income ceilings of social insurance contributions). As a result, most of the burden of redistribution through the state appears to fall on middle-income wage earners while higher wage earners and receivers of capital income contribute relatively little, thus violating the equity objective.

108. The tax system could be made both less distorting and more equitable by:

a. Reducing labor taxes, notably for low-skilled workers by financing part of social benefits, such as basic pensions and, perhaps, also part of basic healthcare, by general taxation, in particular by base-broadening measures. It could also be considered to raise property taxation which is extremely low in NM-EU countries and which is among the least distorting taxes.
b. Linking the non-redistributive part of social security benefits better with contributions, for example by transforming defined benefit pension systems in defined contribution schemes so that this part of contributions would be perceived less as taxes, which would encourage compliance.
c. Eliminating regressivity of labor taxation by shifting the burden more towards higher income brackets, i.e. making it (mildly) progressive.

109. Tax administration could be made more effective by making it more independent from political interference and provide adequate resources, notably in auditing. Penalties for non-compliance should be sufficiently high to raise the potential costs of tax evaders. Tax education should be improved and awareness should be raised, about the benefits of formal employment and the costs of underreporting. For example in spring 2006 and again in 2007, Latvia has launched the campaign, entitled "The employment contract works", which explains the labor law, the importance of the employment contract and the consequences of illegal or undeclared work (Eurofound 2009) and has recently launched new measures based on a broad approach (Box 1). In the UK it has been found that campaigns explaining the benefits of declared work were more efficient than punitative measures (Willliams, 2008).

Box 1 Recent measures in Latvia to combat the shadow economy

In April 2010, the government of Latvia approved a set of measures to reduce the shadow economy. The government emphasized that a broad approach is needed including strengthening tax enforcement but also changing society's opinion of the shadow economy and encouraging legal business transactions. The main measures are:

- Reducing cash transactions in wholesale trade from LVL 3 000 (4240 €) to LVL 1000 (1413 €). If cash transactions exceed this amount the taxpayer must provide a declaration on transactions with the given partner in the previous month. The reasoning is that cash transactions are more prone to tax evasion and fraud than bank transactions;
- Providing access to the tax administration (State Revenue Service) to the Loans Register at the central bank. This measure aims at identifying those persons whose expenditures exceed income;
- Public awareness campaign on how tax revenues are being used, and how paying taxes benefit taxpayers. For this purpose the Finance Ministry's website will also be upgraded;
- Encouraging crime reporting to the authorities;

- Making TIR carnets available to persons who are paid a certain salary in order to reduce undeclared salaries in the transit sector;
- Establishing a special task force to implement the various measures and also to check risk analysis. The task force will also cooperate with businessmen to identify the reasons for informal activities and make specific proposals for reducing informal work in the various sectors.

Table 17: Framework conditions for containing undeclared work

	Tax level	Labor tax wedge	Other tax policies	Ease of tax compliance	Overall assessment of tax factors	Ease of doing business	Efficiency of institutions (corruption)	Educational attainment	Overall assessment of policies to reduce informality (ranking)	Size of un-declared work
Estonia	+	+/-	+	+ +	+ + + +	+	+	+ +	(1)	(1)
Lithuania	+	-	+	+	+ +	+	-	+	(2)	(5)
Latvia	+	+/-	+	-	+	+	+/-	+	(2)	(8)
Slovak Republik	+	+	+	-	+ +	+/-	+/-	+	(2)	(3)
Slovenia	-	-		+	-	+/-	+	+ +	(5)	(6)
Hungary	-	-	+	-	- -	+/-	+/-	+ +	(6)	(7)
Croatia	+/-	.		+	+	-	-	+	(6)	.
Poland	-	-	+	-	- -	-	+/-	+ +	(8)	(4)
Czech Republic	-	+/-	+	- -	- -	-	+/-	+ +	(8)	(2)
Romania	+	-	+	+	+ +	+/-	- -	- -	(10)	(10)
Bulgaria	-	-	+	- -	- - -	+/-	- -	- -	(11)	(11)

Note: Overall tax level: measured by tax revenue as a percent of GDP. Labor tax wedge: measured various indicators such as …. Other tax policies: family taxation, in-work benefits, simplified tax regimes etc..Tax administration: measured by the time spent by a typical firm for tax compliance. General efficiency of institutions: measured by the Control of Corruption index of the World Bank. Size of informal work: measured by European Employment Observatory EU Commission (+ +) means that the size of the informal sector is significantly below, and (+) means just below the average of the country group, (0) means that it is around average. (-) means that it is above and (- -) that it is much average the country average.

Bibliography

Agell, J., T. Lindh, H. Ohlsson, (1997): "Growth and the public sector: a critical review essay", European Journal of Political Economy 13, 33-52.

Ahn, N. and S. de La Rica (1997): "The underground economy in Spain: an alternative to unemployment?", Applied economics, 29, pp. 733-743.

L.L.Albu, (2007): "A model to estimate informal economy at regional level: Theoretical and empirical investigation", paper prepared for the International Conference on regional and Urban Modeling, Free University of Brussels, June 1-2, 2007.

Barth, E. and T. Ognedal (2005): "Unreported labor", IZA Discussion Paper, No. 1893.

Boeri, T. and P. Garibaldi (2005) "Shadow sorting", in Pissarides, C. and Frenkel, J. (eds.), NBER Macroeconomics Annual, MIT Press, 2005.

A.M. Brook and W. Leibfritz (2005): "Slovakia´s introduction of a flat tax as part of a wider economic reform", OECD Economics Department Working Paper No 448.

D. Brou and K.A. Collins (2001): "Winning at Hide and Seek: The Tax Mix and the Informal Economy", in: Canadian Tax Journal 2001, Vol. 49, No. 6.

Cappariello R. and R. Zizza (2009): "Dropping the books and working off the books", Bank of Italy Working Paper No. 702; January 2009.

Dalsgaard, T.(2008): "Tax and Welfare Reforms in the Czech Republic – Structural Implications and Challenges", IMF Working Paper No. 52, May 2008.

Daveri, F. and Tabellini, G. (2000), "Unemployment, Growth and Taxation in Industrial Countries", in: Economic Policy, 4/2000.

Dreher et al. (2005): A. Dreher, C. Kotsogiannis and S. McCorriston, "How do institutions affect corruption and the shadow economy?"

Dreher and Schneider (2006): "Corruption and the Shadow Economy: An Empirical Analysis".

EC (2006): "Macroeconomic effects of a shift from direct to indirect taxation: a simulation for 15 EU member countries". Note presented at the OECD Working Party No.2, November 2006.

EC (2007): "European Employment Observatory".

EC (2007a): "Undeclared Work in the European Economy", Special Eurobarometer, October 2007.

Ederveen S. and L. Thissen (2004): “Can Labor Market Institutions Explain Unemployment Rates in New EU Member States”, ENEPRI Working Papers, July 2004.

Gorodnichenko Y., J. Martinez-Vazquez, K.S. Peter (2007): “Myth and Reality of Flat Tax Reform: Micro Estimates of Tax Evasion Response and Welfare Effects in Russia”, IZA Discussion Papers No. 3267, December 2007.

Hanousek J. and F. Palda (2008): “Tax Evasion Dynamics in the Czech Republic: First Evidence of an Evasional Kuznets Curve”, CERGE-EI.
Prague, September 2008.

Horáková, M., Kux, J. (2003): “Country Study on Informal Economy in the Czech Republic”. Prague, Research Institute of Labor and Social Affairs.
http://www.vupsv.cz/INFORMAL_ECONOMY.pdf

Ivanova A., M. Keen, and A. Klemm (2005): “The Russian Flat Tax Reform”,
IMF Working Paper, January 2005.

Kertesi and Köllö (2003) “Fighting ´Low Equilibria´ by Doubling the Minimum Wage? Hungary’s Experiment”, Institute of Economics Budapest, William Davidson Institute and IZA Bonn, Discussion Paper No. 970, December 2003.

Kornai J., (2000): “Hidden in an envelope: Gratitude payments to medical doctors in Hungary”; in: Festschrift in honour of George Soros, CEU Press, Budapest, 2000.

Krajcir Z. and L. Odor (2005): “First Year of the Tax Reform or 19 percent at Work”, FPI Financial Policy Institute, Ministry of Finance of the Sovak Republik, September 2005.

Layard, Nickel and Jackman (1996): “Combatting Unemployment: Is Flexibility enough?” In: OECD: Macroeconomic Policies and Structural Reform, Paris, 1996.

Leibfritz, W. (2008): “Reducing Undeclared Work in Hungary – The Role of Tax Policy and Administration”, Paper prepared for the World Bank.

Leibfritz W. and J. Thornton and A. Bibbee (1997): “Taxation and Economic Performance”, OECD Economics Department Working Paper Nr. 176,1997.

Kriz, K., J. Meriküll J., A. Paulus, K. Staehr (2007): “Why do individuals evade payroll and income taxation in Estonia?” University of Tartu, Faculty of Economics and Business Administration 2007.

Meriküll, J. and K. Staehr (2008): “Unreported employment and tax evasion in mid-transition: Comparing developments and causes in the Baltic States, Bank of Estonia”, Working Paper Series 6/2008.

Myles, D. (2009): “Economic Growth and the Role of Taxation: Aggregate Data”, OECD Economics Department Working Paper No.714, 2009.

Mitra P. and N. Stern (2003): “Tax Systems in Transition”, World Bank Policy Research Working Paper, Nr. 2947.

Münich, D (2007): “Undeclared Work in the Czech Republic”, May 2007 (Update of the 2004 EEO Review on Undeclared Work)

OECD (2007): “Benefit and Wages”.

OECD (2009): “Economic Survey Slovenia”.

Pashev, K. (2006): “Presumptive taxation: Lessons from Bulgaria”, Post Communist Economies, Vol.18, December 2006.

Penalosa, C. and St. Turnovsky (2004): “Second-bet optimal taxation of capital and labor in a developing economy”, in: Journal of Public Economics, August 2004.

Peter, Klara Sabirianova (2008): “Falling Tax Evasion: How Much Can Tax Rates and Labor Regulations Explain?” Andrew Young School of Policy Studies Research Paper Series, Working Paper 08-10, February 2008.

Peracchi, F., Perotti, V., Scarpetta, S., Carletto, G., Pagés, C. and K. Scott (2007): “Informality and social protection: preliminary results from pilot surveys in Bulgaria and Colombia”, paper presented at the IZA-World Bank Workshop “The Informal Economy and Informal Labor Markets in Developing, Transition and Emerging Economies”, Bertinoro, 26-27 January 2007.

Prusa, L., I. Bastyr, M. Brachtl, J. Vlach (2009): “The Socio-economic Status of Self-employed Persons in Czech Society”, Research Institute for Labor and Social Affairs (RILSA), Prague 2009.

Ram, M, P. Edwards and T. Jones (2004): “Informal Employment, Small Firms and the National Minimum Wage”, A Report prepared for the Low Pay Commission of the United Kingdom, September 2004.

Scharle, Á. (2002): “Tax Evasion as Innovation in Small Businesses in Hungary. Paper for the conference on Unofficial Activities in Transition Countries: Ten Years of Experience”, Zagreb (www.ijf.hr/UE_2002/program.html).

Scharle Á., (2007): “Tax evasion as innovation in small businesses in Hungary”. (Manuscript).

Schneider F. (2009): “The Size of the Shadow Economy for 25 Transition Countries over 1999/00 to 2006/07: What do we know?”September 2009.

Schreiner, J. (2008): “Labor markets in Central, Eastern and Southeastern European EU Member States: General Trends and Migration Effects”, in: Focus On European Economic Integration, 1/08.

Slemrod, J. (2002): “Tax systems”, NBER Reporter, Summer 2002.

Slemrod, J. and S. Yitzhaki (2000): “Tax Avoidance, Evasion and Administration”, NBER Working Paper No. W7473.

Staehr, K. (2009): “Estimates of employment and welfare effects of personal labor income taxation in a flat-tax country: The case of Estonia”, in: Mayes, David (ed.), Microfoundations of Economic Success: Lessons from Estonia, Edward Elgar, ch. 7.

Tanzi, V. and Schuknecht (1996): “Reforming government in industrial countries”, Finance and Development, September 1996.

Tonin, M. (2007): “Minimum Wage and Tax Evasion: Theory and Evidence”, William Davidson Institute Working Paper Number 865, January 2007.

Võrk, A. (2004): “The Effect of Social Benefits on Labor Supply in Estonia. An Econometric Analysis”. Mimeo, University of Tartu, Department of Economics and Business Administration.

Võrk, A., Leetma, R., Paulus, A., Anspal, S. (2006): “Tax-Benefit Systems in the New Member States and Their Impact on Labor Supply and Employment”, Praxis Center for Policy Studies Working Paper, No. 26. 2006

Williams C. (2008): “Illegimate wage pracises in Eastern Europe: The case of ´envelope wages´”, in: JEEMS – Journal for East European Management Studies, No.3 2008.

Yitzhaki S. and J. Slemrod (2000): “Tax Avoidance, Evasion, and Administration”, NBER Working Paper, No. W7473, January 2000.

Zabko, M.A. Rajevska, F. (2007): “Undeclared work and tax evasion: case of Latvia”. Paper presented at colloquium of the Belgian Federal Service for Social Security on Undeclared Work, Tax Evasion and Avoidance, Brussels, June 2007.